PULP & PAPER

AUGUST 1956

A SPECIAL FIELD REPORT:

East Texas Pulp and Paper Co.

Complete story with many exclusive pictures of first entirely new company and mill in America since 1930's.

(SPECIAL PULP & PAPER AIR VIEW BELOW)

SIZING PROBLEMS?

Cyanamid can help you cut them down to size

It would be hard to find a sizing problem that our Technical Service Staff has not met at one time or another. Out of this experience we have developed a great number of size grades—*more than any other supplier*. That's why we can meet a mill's sizing requirements exactly. With this most complete line, plus our research and application laboratories to back it up, most problems can be quickly cut down to size. Take these problems:

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FOAM? ACCOBRITE® Size offers a *zero* foam index. Or you may find the solution in low-foaming CYFOR Size or non-foaming dark sizes.

BRIGHTNESS? Tops for brightness and color stability are X and WW grades of ACCOBRITE Size.

HIGHER SIZING SPECS? Meet them with CYFOR Size and cut costs or meet requirements unattainable with other sizes.

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We could go on and on. Perhaps your best bet, though, is to talk over sizing problems with your Cyanamid Technical Service man. He'll help you cut *any* problem involving paper chemicals down to size.

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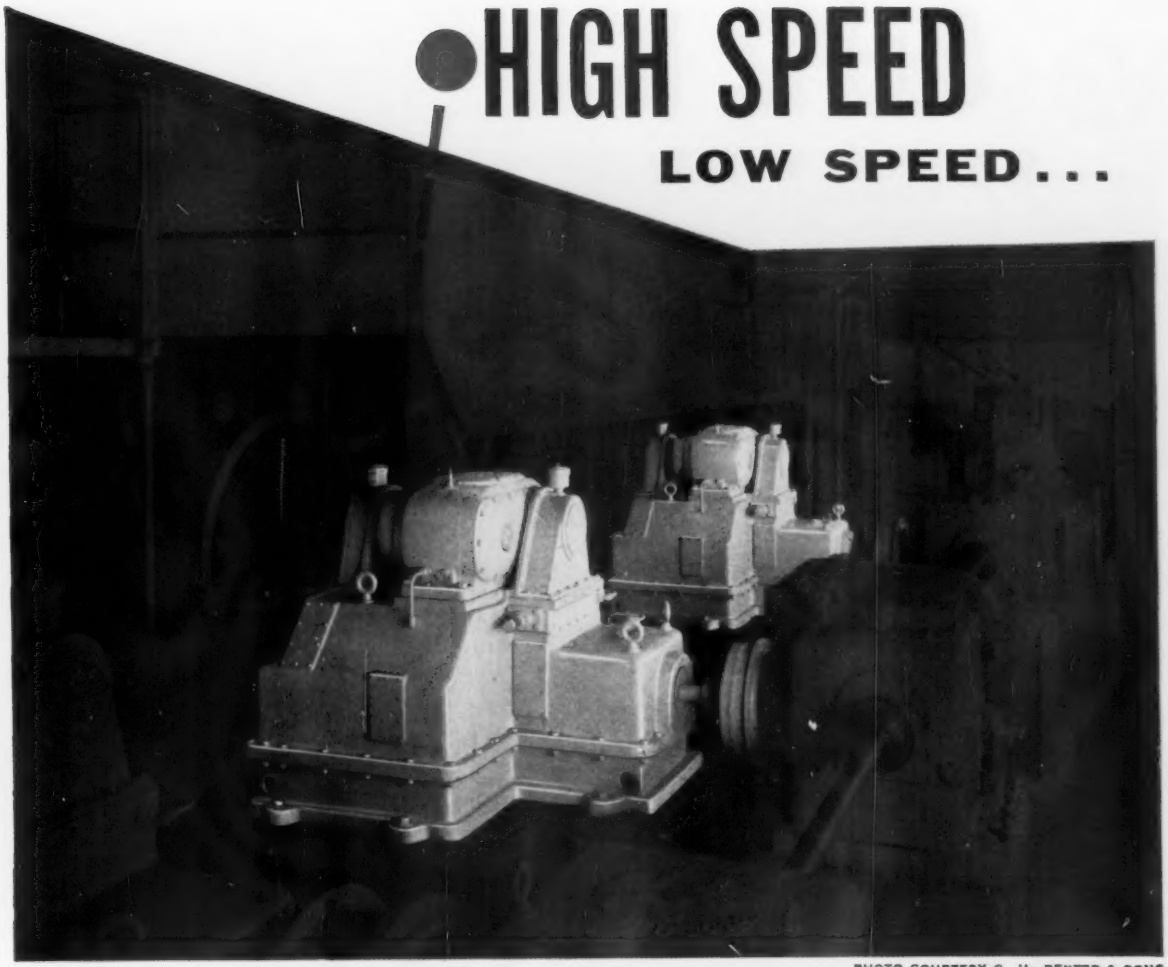

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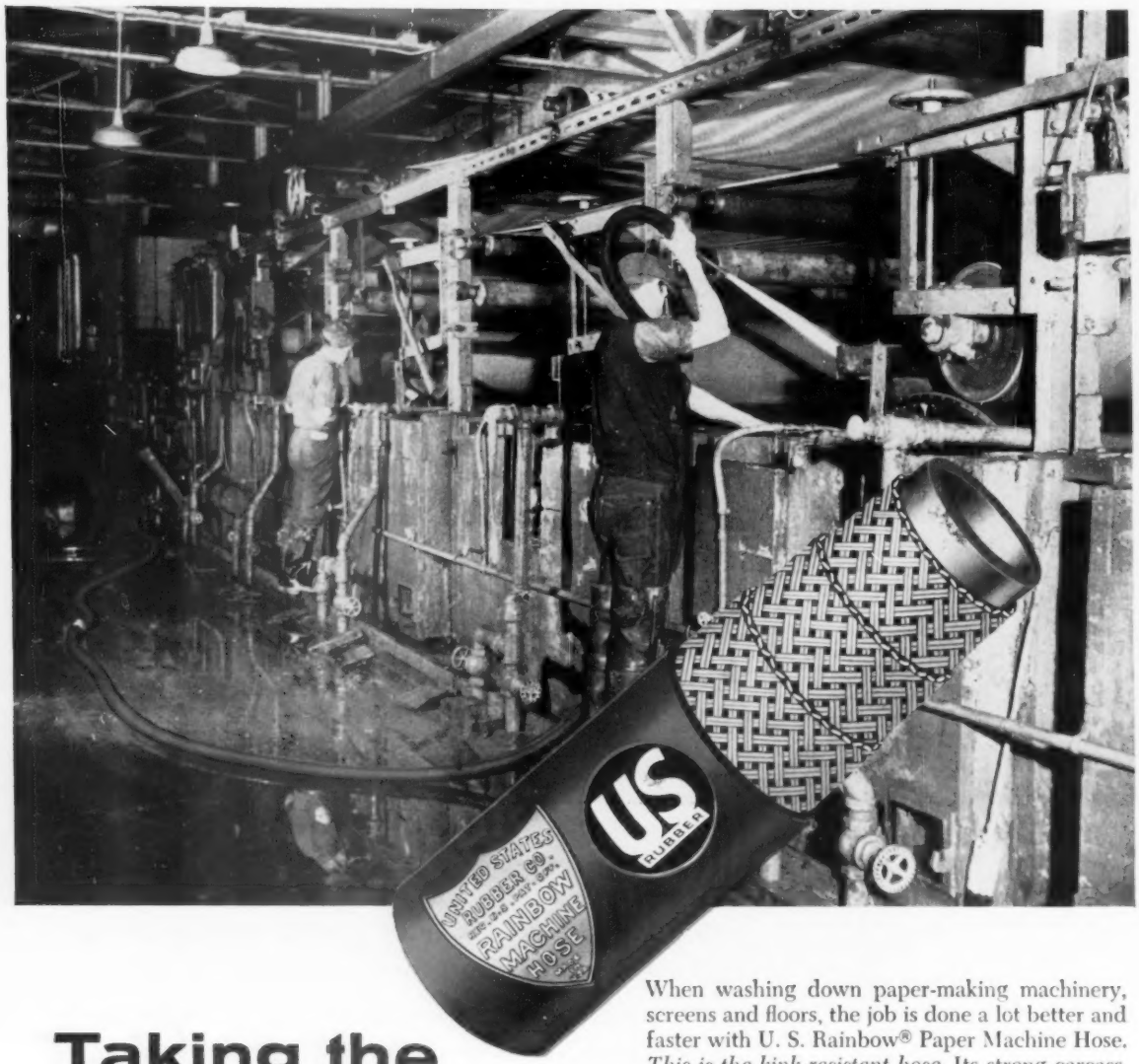

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Mechanical Goods Division

United States Rubber

August 1956

PULP & PAPER

READER'S GUIDED TOUR

VOLUME 30
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PULP & PAPER

EDITOR READS HIS MAIL

More About the S.A.F. And Timber Resource Review

Cheverly, Md.

Editor: The editorial comments and exchange of letters between yourself and Mr. Henry Clepper on the Society of American Foresters and the Timber Resource Review (June issue, page 5) in my judgment, fails to touch upon the central point—how can the SAF take a stand on the TRR?

The columns of the Journal of Forestry, the floor of section meetings and the national meeting at Memphis this fall, are all open to members wishing to express individual views on TRR.

However, a Society position, as such, would require a referendum vote. To be meaningful the vote would have to be preceded by an analysis, and a study of that analysis by the members before voting.

The TRR is a huge and complex thing and such an analysis could only be obtained by the Society voting funds to hire a committee of its members, or relying on a selected group to contribute many valuable hours of their own for its preparation. In order for a vote to be meaningful the members would also have to devote their time to reading a good part of TRR in the light of the analysis.

As a professional society I would doubt that the SAF could approach the subject in any other way unless it wished to risk damage to professional standards.

The SAF might, as a professional organization, express its feelings on the matter generally, such as:

1. Resolved: Should there be a TRR? or

2. Resolved: A TRR should be made every 10 years.

This type of referendum can be properly voted upon without the extensive and painstaking review needed to resolve that the present TRR is in need of a major over-haul before publication.

Actually, the SAF is an organization of professional people with diverse interests and employment in the field of forestry. It is organized to promote the development of the profession, not to champion particular substantive causes.

I am sure, however, that you can expect to find many individual views on the TRR expressed in professional media over the next several years.

We may not galvanize into action with a ringing endorsement or condemnation on a given subject on an instant's notice. However, long after the initial heat and fury have subsided, members of the SAF will continue to make their influence felt in the development of lasting improvements in our conservation programs.

ROBERT E. WOLF

Transporting Logs by Sea

Escom House
Rissik St.
Johannesburg,
So. Africa.

An investigation is being made here in South Africa into the possibility of transporting logs by sea over a distance of about 160 miles. Due to geological factors such as a complete lack of harbor or river of which use can be made, information is sought on methods involved in self-propelling shallow draft barges or long "fascine like" bundled rafts which it is understood have been used on the Northwest Pacific Coast of America.

It would be appreciated if data could be given on this system; on the methods of bundling, types of strapping or binding employed, launching and/or cradling methods, etc., and whether launching is into the open sea or protected water.

M. MACEY
Industrial Development Corp. of South Africa, Ltd.

Eds. note—Pictures, articles, etc. were sent to Mr. Macey by Ward C. Williams, Seattle, and Charles L. Shaw, Vancouver, B.C., of PULP & PAPER, along with these comments. Mr. Williams wrote:

As far as we can determine, there are no self-propelled, shallow-draft barges operating in Alaska or Washington carrying logs. However, self-dumping barges, towed by tugs, have been employed for several years in the area. In recent years there have been a number of innovations in the methods of making up log rafts. As to bundling, this is becoming a very popular practice. Steel strapping (i.e., wide steel bands, up to 2" wide by 0.050" thick) is almost universally used, although steel cables are used by some operators. The advantage of cable is that it can be re-used. Steel strapping can be re-used, but it happens that the labor costs in handling the used strapping surpass the cost of brand new straps. Strapping logs in bundles is used mainly for hemlock, a heavier species here on the West Coast; this avoids "sinkers" (logs that are so heavy they sink to the bottom).

For shorter hauls in protected waters, flat rafts are more or less the rule. Here there is just a single layer of logs, and they lie loose within the raft. Where there are hauls of several hundered miles through exposed or rough water, the Davis raft is often used. This is a rectangular shaped raft with a number of layers of logs held in place with cable. The Benson raft was one developed for long ocean hauls. It consisted of a number of layers of logs bound into a cigar shape.

Mr. Shaw wrote:

John Liersch, vice president of Powell River Co., in charge of timber operations, says that methods of raft construction have been so frequently revised and modified that anything written on the subject even a few years ago would be somewhat out of date, although it would probably be useful to you.

Island Tug & Barge, Ltd., Victoria, B.C., has converted many former sailing ships and other craft into log-carrying barges by removing the superstructure and carrying out various structural changes in the hulls.

B.C. Forest Products, Ltd., Vancouver, has developed a method of transporting logs through semi-exposed water on the west coast of Vancouver Island by bundling them with steel straps or chain and fashioning them into rafts. This is also practiced by Comox Logging & Railway Co. on the east coast of Vancouver Island.

In this part of the world, timber operators transport logs by carrier, barge and raft distances of 200 miles or more as a matter of routine. While the steel carriers operate throughout the year, the movement of rafts in open water is usually confind to the milder weather periods between April and October.

P&P Makes It a Small World

Cape Town,
Union of So. Africa

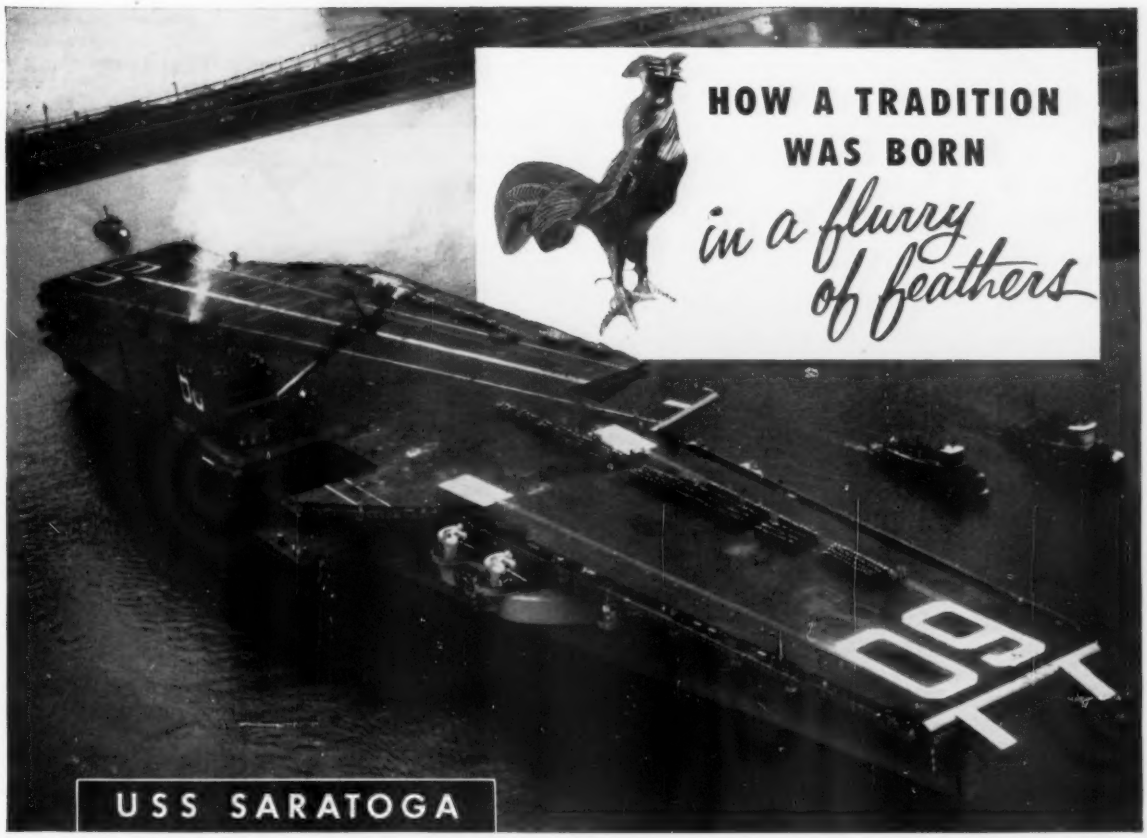
Editor: As a result of the articles I have been writing for PULP & PAPER from South and East Africa, concerning industry developments in this part of the world, I "re-discovered" a very old friend of mine who is now in India. He wrote to me after locating my whereabouts through reading PULP & PAPER.

HANS BAARS
Consulting Pulp and Paper Engineer.

HERE'S HOW to address your letter to this department:

No anonymous letters will be considered but names may be withheld if desired.

The Editor
PULP & PAPER
1791 Howard Street
Chicago 26, Illinois



The symbol, and the spirit, of the fighting gamecock lives on with the commissioning of the powerful aircraft carrier, *USS Saratoga*.

The incident which gave birth to this 142 year old Navy tradition took place on the decks of the first *Saratoga* as she closed for action against four men-o'-war in 1812. In the opening minutes of the engagement an enemy ball landed on deck – crashing into a coop containing a gamecock brought aboard by a sailor.

With a flurry of feathers, the startled bird flew to the rail and, as if expressing his personal indignation, crowed lustily and defiantly. Taking this as an omen of good luck, the outnumbered and outgunned American ship entered the battle with new courage and completely won the day.

The Navy's newest aircraft carrier is the fourth ship to bear the name *Saratoga* and adopt its fighting symbol. As aboard its sister aircraft carriers, the USS Forrestal, USS Independence*, and USS Ranger*, Walworth Valves and Fittings are installed. We are proud of the many contributions that our products and engineering skills have made to these outstanding vessels.

Walworth products installed aboard these ships include Pressure-Seal Cast Steel Gate, Globe, and Angle Valves, Fabricated Cast Steel Manifold Valves, Cast Steel Y-Globe and Angle Valves, Bronze Gate, Globe, Angle, and Check Valves and thousands of Walworth pipe fittings including Walseal® Fittings, Flanges, and Unions.

*Now under construction.

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PULP & PAPER

NEWS OF THIS "GROWTH INDUSTRY"

• In the next year and a half about $2,500,000,000 is being expended on new mills and machines in the United States.

There are 31 new paper machines known to be coming into production this year—counting a few that have already started up. This total tonnage, plus about 33% more increase resulting from machine rebuilds, will bring in 1,750,000 short tons of additional paper and board annual tonnage capacity in United States.

For 1957, a PULP & PAPER survey shows exactly the same number of new machines on the way—31 of them. Their tonnage, with nearly 25% additional for rebuild jobs, will bring in another grand total of some 2,200,000 annual tons.

There are already 10 other new machines on the way for 1958, and plus rebuilds, will add another 1,000,000. About 15 more machines are in discussion or planning stage, and these latter include such companies as Tennessee River Paper Co., Simpson Redwood Co. of California and Pulpwood Development Co. of Fulton, Tenn., some of which are regarded as "sure things."

STANFORD REPORT BECOMING "OBSOLETE" . . . For the first half of 1956, the U. S. paper and board industry is producing at the annual rate of 32,000,000 tons. If maintained until Dec. 31, this would mean about a 2,000,000 leap upward from the phenomenal all-time record in 1955 of 29,883,060 tons, which was 12% up from 1954. A 32,000,000-year in 1956 would be a 20% increase over 1954. And it would mean the Stanford Research Institute forecasts are already out-dated—as that much discussed forecast did not calculate a 32,000,000 year until 1960.

GEORGIA PLYWOOD EXPANDS . . . Georgia Plywood has bought one of the substantial lumber firms of Oregon, Coos Bay Lumber Co., which for many years supplied pulp logs to the Scott Paper Co. mill in Coos Bay, and G. P. has an option on another major lumber firm in that area. It looks like the new Georgia Pacific Paper Co., which is putting in a 250-ton kraft mill at Toledo, Ore., is being well backed up by the parent firm.

BLYTH SAYS GROWTH IS SOUND . . . For 26 years, the pulp and paper industry of the U.S.A. has been averaging a growth average of 4% per annum, as compared with 3½% for all industry, says a Blyth & Co. analysis of this industry which was sent to all editors of PULP & PAPER.

IN THE PARLANCE OF THE INVESTMENT WORLD, "Growth Industry" is a term used to differentiate certain industries from those which, by their very nature, are necessarily static, others that are speculative, etc. It has only been in recent years that most of the investment world has recognized pulp and paper as a genuine "Growth Industry." Its planning is longterm, its markets and uses are basic, they keep increasing, and it is the only major industry based upon a renewable resource—trees. Depressions may come and go—they will never wipe out trees.

While at present some leaders in the industry have been concerned over possible over-expansion and it is virtually an official position of this industry that "Stop-Look-Listen" should be the watchword in all future planning, the Blyth report states that a certain amount of expansion of production facilities must continue to be built. This is necessary, it says, to provide a comfortable margin over absolute requirements.

Henry J. Perry, industry consultant, W. LeRoy Neubrech of the U.S. Dept. of Commerce, and the economic staff of APPA were credited with collaboration in the Blyth report, with Mr. Perry as author.

The report says "modern mills in the South and West produce quality pulp and paper at costs competitive with mills anywhere; the same may be said for those mills in New England and the Lake States which have learned to use abundant stands of hardwoods."

Mill sites in South and Pacific Northwest are much sought for, and hard to find, but "statesmanlike leadership" and "sound financial structures under management that is industry-wise" indicate expansion so far under way is justified. The world will in the future obtain its "major share of rising demand for pulp, paper and board," from U. S. and Canada, says the report.

MORE TONS OF PULP . . . But now it appears a phenomenal 10,000,000 annual tons of new woodpulp capacity will be added in Canada and the U.S. by the end of 1958, of which close to 1,000,000 tons will be market pulp. PULP & PAPER verifies these figures with two major companies which have made their own surveys. This has the industry leadership sounding off now in favor of caution, and while no official leaders will say "we are overexpanding," many of them say it is time to ask the question.

SUTHERLAND OPTIONS SITE IN

NEW AIR VIEW OF WORLD'S BIGGEST NEWSPRINT MILL. This aerial photograph of Powell River Co. operation in British Columbia, taken in June, 1956, shows advanced state of construction where No. 9 paper machine is to be housed (left foreground). The 262-in. Dominion Engineering machine is expected to increase Powell River's newsprint production by about 25% to 500,000 tons next year. Cost of the machine and ancillary equipment is about $20,000,000. Powell Lake is seen in background. Present construction is in an area previously undeveloped.

SOUTH . . . Sutherland Paper Co. of Kalamazoo, Mich. has entered the picture in the South. It has taken a minimum money option on a site in Richmond County, Ga., near Augusta, as possible location of a multi-million dollar pulp mill.

Sutherland is conducting engineering surveys to determine whether the site is suitable as far as timber and water are concerned. Such a plant would supply its expanded Kalamazoo operations and also its recently acquired Fort George Paper Co., in Castleton-on-Hudson, N. Y.

A pretty definite piece of news from the South is that two major companies which already have mills in Louisiana are planning new mills at new and different locations. Engineering work is proceeding on one of these.

Powell River Co., while having announced it is considering mill site in the South, denies rumors that it has one all picked out in Arkansas. A lot of study and negotiation is going to take place before any final action and it is pretty certain that this possible Southern mill is not going to move very fast. Don't look for any announcement in the near future.

Green Bay Pulp & Paper denies it has settled on a Southern mill site.

OTHER NEW MILLS . . . A new pulp mill at Newport, Wash., is being discussed in connection with two major wood products companies which may get together on the plan.

M. J. Opsahl heads a group of Duluth, Wis., business men who are considering a hardboard or pulp board products plant in the big Klearflax Linen Looms plant in that city which they have purchased.

Charmin Paper Mills of Green Bay, Wis., has started rehabilitating the long idle Cheboygan mill which it acquired through bankruptcy sale. Production is to start up in early 1957, says Joe M. Conway, Charmin president. Two paper machines, a groundwood mill, and paper reclaiming plant are to be renovated. The mill will not only make Charmin tissue, but other paper grades. Some 6,500 cords of wood are now being purchased for storage.

NEW MILL IN ARIZONA . . . Southwest Lumber Mills, Inc., with sawmills and logging camps near McNary and Flagstaff, Ariz., announces it has bought 87,000 acres of timberland from Aztec Land and Cattle Co., and plans construction of a pulp and paper mill. Southwest Lumber Mills Inc., is one of America's largest producers of forest products.

J. B. Edens, president, plans the mill in the Taylor-Snowflake area of Arizona, but said several years will be required before it could be placed in operation. He estimated cost at $30,000,000 to $40,000,000. Southwest began drilling five or more test wells in the Taylor-Snowflake district to determine if there is an adequate water supply. A market survey will determine what kind of products can best be produced.

MAKE STUDIES FOR DIBOLL MILL . . . JAMES LOVE, left, President of Love Wood Products at Diboll, Texas, an affiliate of Southern Pine Lumber Co., and BOHUSLAV E. MIKULKA, who escaped through the forests of Czechoslovakia into Austria from behind the Iron Curtain, are studying flakeboard manufacturing. They will submit a complete report to Southern Pine and Lumber before the company begins its new fiberboard mill. Love Wood Products coordinates study and development of forest by-products.

THIRD PAPER MILL FOR PINE BLUFF . . . Possibility of a third paper mill for Pine Bluff, already the announced location for IP's new $57 million newsprint mill and a new $15 million mill by Dierks Forests, was indicated by Murphy Corp. of El Dorado, which took option on 800 acres of land near the city. The company has assets of about $70 million and says it is interested in the paper field.

HUDSON TO MAKE NEWSPRINT . . . Hudson Pulp & Paper Corp., announced in Atlanta, following a meeting with 14 leading Southern newspaper publishers, that it will build a $25 million newsprint mill adjacent to its new kraft mill at Palatka, Fla. Company expects to be producing newsprint by late 1958 and is aiming for initial production of 100,000 tons. President William Mazer said a Rice Barton machine is on order.

At the Atlanta meeting, Mr. Mazer said all the newspaper executives present had either signed contracts to accept newsprint from the new mill or have given verbal agreements to buy it. He did not say how much has been sold. Freight rate studies indicate that Hudson will be able to sell its newsprint at competitive prices as far west as St. Louis and as far north as New York.

With completion of this mill, Mr. Mazer pointed out, about 982,000 tons of newsprint will be produced in the South. This is about 207,000 tons a year short of Southern requirements.

JAMES EDENS, President of Southwest Lumber Mills Inc., plans Arizona pulp and paper mill costing $30- to $40,000,000.

ST. REGIS TO BUILD LAB . . . St. Regis will build a new $330,000 pulp and paper laboratory this fall at its Pensacola, Fla., mill. The building will house the company's plant engineering staff and will include the latest equipment for making chemical analyses of wood chips, pulps and papers. Pulping research will be conducted on the utilization of short-fibered wood to provide more uniformity in paper formation and improve surface smoothness for printing quality. Also, studies to determine optimum pulping methods for hardwoods available near the mill.

NEW FIBERBOARD MILL IN TEXAS . . . The Southern Pine Lumber Co., one of the largest in Texas, has announced ambitious expansion plans which will include a new $4 million fiberboard mill at Diboll, Tex., to produce 100 million bd. ft. a year by the fall of 1957.

Southern Pine recently purchased 100 million ft. of pine timber and an undisclosed acreage of hardwoods from International Paper Co. The timber is part of the old Forst block which IP bought from Olin Mathieson last April.

Don Gleaves, formerly of National Gypsum, will operate the new mill. Johnson & Johnson, engineers of Chicago, are designers, working with Bauer Bros. Co., Carrol Allen, Southern Pine engineer, Mr. Gleaves and U. S. Forest Products laboratory.

TO PRODUCE 400 TONS NEAR ROCK HILL . . . A new South Carolina law permitting an alien-owned firm to hold up to 500,000 acres of land in the state has cleared the way

NEWS OF THIS "GROWTH INDUSTRY"

for Bowaters new mill near Rock Hill, S. C. Plans are to turn out 300 to 400 tons of pulp a day. Proposed site is at Catawba, S. C., between Rock Hill and Lancaster.

UNION BAG BOX PLANT . . . Union Bag & Paper Corp. will build a corrugated box plant at Lakeland, Fla. Corrugated sheets manufactured at Savannah will be shipped there for fabricating into boxes, primarily for the citrus and vegetable industry.

BUILD CROFTON MILL . . . Commonwealth Construction Co., Vancouver, B. C., has been awarded the contract for building B. C. Forest Products' $38,500,000 bleached sulfate pulp mill at Crofton, B. C. Land clearing has been under way, and excavation and foundation work is starting.

ST. REGIS PULP MILL TO DOUBLE SIZE . . . The $50,000,000 bleached sulfate mill being built at Hinton, Alberta, by North Western Pulp & Power Co., to make St. Regis bleached kraft pulp, will be doubled in size within 18 months, according to Frank E. Ruben, chairman of the board. Present scheduled capacity is 430 tons, although the Minton dryer ordered from Dominion Engineering Co. is capable of production over that rating.

An estimated 1000 men are now employed cutting lodgepole pine, white and black spruce and poplar. A pulpwood purchasing division has been established under J. L. Jansen, formerly of the Alberta forest service.

CALIFORNIA PAPER MILL . . . American Forest Products Corp. plans to start production in early 1957 of a $1,500,000 paper mill on property adjacent to its container plant at Newark, Calif. It will make 50 tons daily of paper to supply material for the container plant. L. J. Meunier will manage the new paper mill. He has been president and general manager of Eagle Paper Co., Downingtown, Pa., and before that was pulp mill superintendent for North Carolina Pulp Co., Plymouth, N. C. Mr. Meunier has developed a process for water treating, refining and re-use which he will put into effect at the new mill at Newark.

IOWA MILL . . . Crandon Enterprises, which is converting a strawboard mill formerly owned by Hinde & Dauch at Fort Madison, Ia., has changed its name to Crandon Paper Mills, Inc. It plans to start making semi-chemical corrugating medium this summer at Fort Madison and already is buying and storing wood. E. N. Peterson, general manager for Crandon, has appointed O. K. ('Ozzie') Krogfoss as sales manager for the company throughout the U.S.A. Mr. Krogfoss has been a Union Bag & Paper Corp. salesman and was a forestry major graduate at U. of Minnesota.

$56,500,000 EXPANSION IN MINNESOTA . . . Pulpwood, used by eight Minnesota pulp and paper companies operating 11 plant installations, is gaining in demand. According to John V. Hoene, executive secretary, Forest Industries Information Committee, Duluth, Minn., the value of forest products in 1954 was $164,000,000 compared to $78,000,000 in 1944, making a gain of $86,000,000.

The eight companies report they have spent over $90,000,000 since World War II on modernization and expansion. They plan to spend $56,500,000 on expansion between now and 1960. Since World War II, the number of mill employes has gained by 45%, going from 5621 to 8133 employes or an increase of 2512. At the same time, the use of pulpwood has increased from 443,000 cords to 720,700 cords in 1955. These mills by 1960 expect to use over 1,100,000 cords of wood, nearly double 1950 consumption and nearly triple 1940 consumption. It will be 110 times more pulpwood than was used in 1900 by the two infant paper mills in existence at that time.

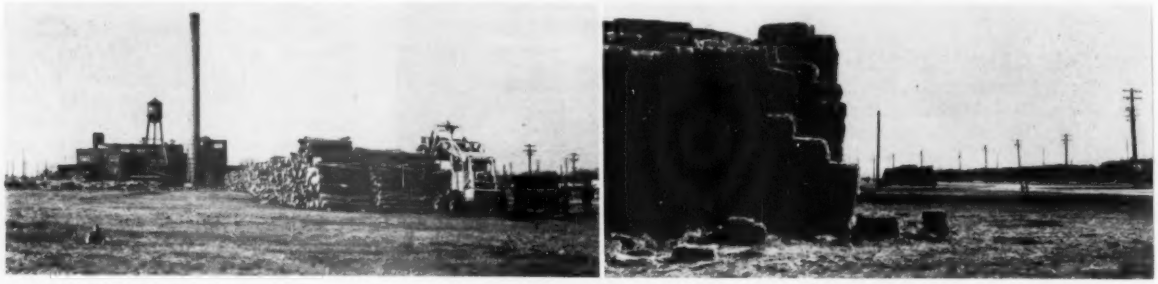
Much of this story of a forest industry rebirth revolves around aspen, the so-called "weed-tree," along with jack pine. These Cinderellas of the forest, which have sprung up on much of the burned-over forest land, were first used for pulpwood in 1924.

PLANS IN SASKATCHEWAN . . . A 600-ton bleached and unbleached sulfate pulp mill costing initially between $50,000,000 and $60,000,000 will be built near Prince Albert, Saskatchewan, under the name of Waskesiu Forest Products, by Vancouver (B.C.) and New York financial interests. It will be the first pulp mill and the largest single industry in Saskatchewan. When completed, every province of Canada except minuscule Prince Edward Island will be producing pulp.

Principal figure behind Waskesiu Forest Products is Robert G. Campbell, Vancouver, active in construction business in British Columbia, president of Mid-Western Industrial Gas of Edmonton, chairman of the board, St. Paul Ammonia Products, president of Inland Chemical, and a director of Canadian Export Gas and other companies. The New York group has not been named.

ACQUIRES FULL OWNERSHIP . . . National Container Corp. announces it has acquired from Lester R. Edwards and family their 45% interest in Northeastern Container Corp., giving NCC 100%. Northeastern, organized in 1935 jointly by Mr. Edwards and National Container, has a 160,000 sq. ft. fully integrated corrugated container plant in Bradford, Pa.

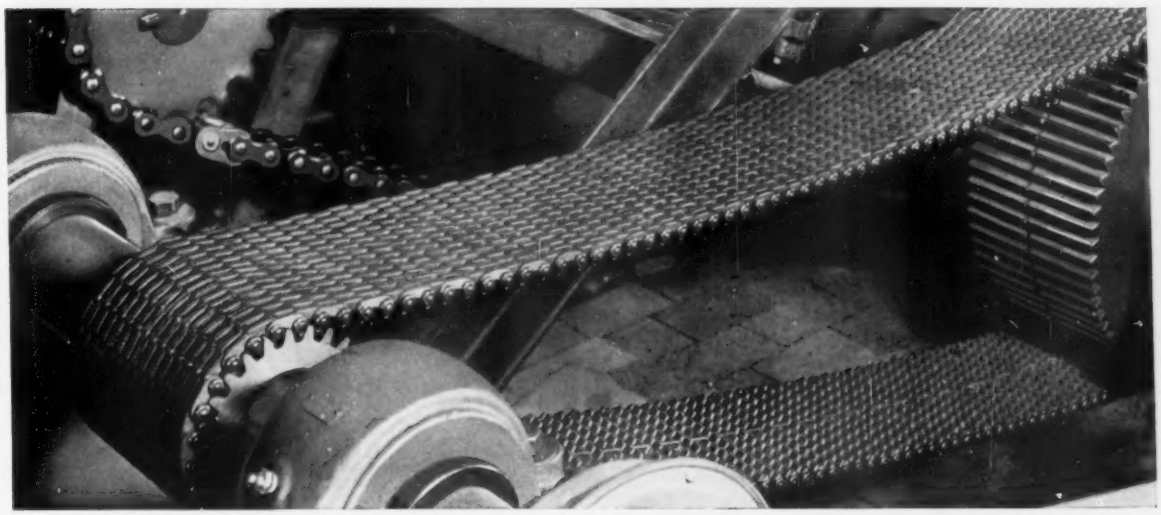
$1,000,000 FOR RESEARCH . . . Consolidated Paper Corp., one of Canada's major newsprint producers, with five mills in Quebec, has announced plans for a $1,000,000 research and development center at Grand'Mere, Que. Dr. Alan H. Vroom, Montreal-born chemist, recently chief



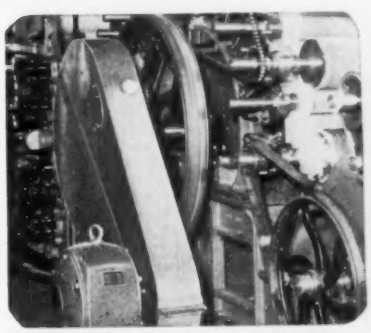
FROM STRAW TO HARDWOODS . . . The new Crandon Paper Mills Inc., mill at Fort Madison, Ia., to start making semi-chemical corrugating medium from hardwoods this summer. It was a Hinde & Dauch strawboard mill—straw pile is due to disappear.

Check your drives against the benefits of

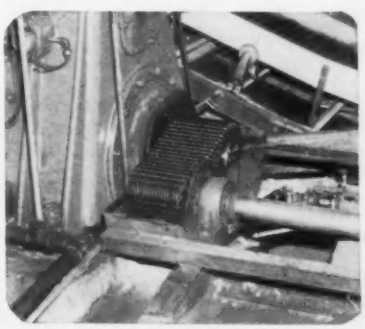
LINK-BELT silent chain



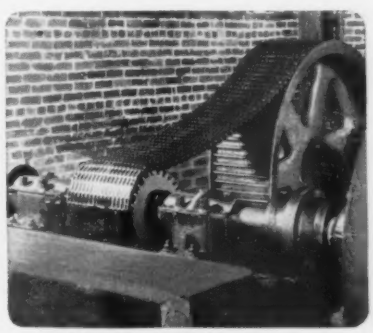
☐ **HIGH SPEED.** Link-Belt silent chain drives are noted for slipless dependability—maintain better than 98% efficiency whether operating over large or small diameter wheels or on long or short centers. For further details on these and more advantages, call your Link-Belt office or authorized distributor.



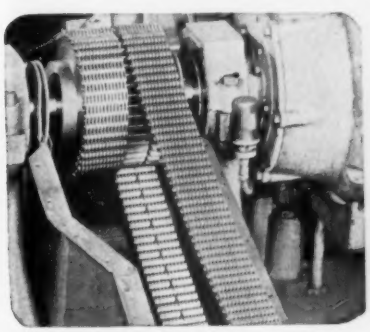
☐ **ADVERSE OPERATING CONDITIONS.** Heat, humidity, cold do not lower Link-Belt silent chain's great efficiency.



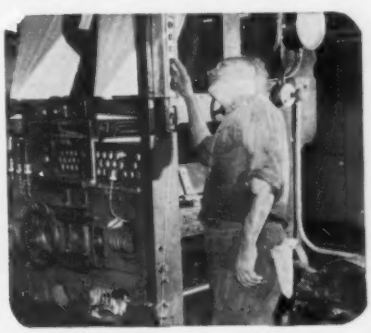
☐ **LARGE OR SMALL HP.** A versatile line, these Link-Belt drives are available from fractional to thousands of hp.



☐ **LARGE RATIOS.** Link-Belt silent chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



☐ **LIMITED SPACE.** Easy to assemble in close quarters, Link-Belt silent chain permits built-in drives, compact housings.



☐ **LONG LIFE.** After 13 years on this newspaper press at speeds up to 4,700 fpm, Link-Belt silent chain is still efficient.

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NEWS OF THIS "GROWTH INDUSTRY"

of applied chemistry section, Weyerhaeuser Timber Co. at Longview, Wash., has been named director of the center.

NOVA SCOTIA SITE FOR BOWATER? . . . Controlling interest in Mersey Pulp & Paper Co. at Liverpool, Nova Scotia, is reported bought by Bowater Paper Corp., which recently announced plans to build a 100,000 ton groundwood mill somewhere in Canada. Major shareholder in Mersey had been I. W. Killam, Nova Scotia capitalist, who died a few months ago. The shares were valued at about $35,000,000 unofficially, or about 78% of the capital stock. A previous offer of $28,000,000 for the Killam shares was reported. A new company, Scotian Paper Co., was incorporated to issue 10,000 shares to cover the price of the Killam stock.

ANOTHER MERGER . . . Continental Can Co., Inc. and Hazel-Atlas Glass Co., have announced plans for combining their activities. With this step Continental Can will add glass containers to its line of metal containers, fiber drums, paper containers, bottle crowns and caps, flexible packaging materials, plastic containers, paperboard and other packaging products. Continental has 86 plants in 27 states, Canada and Cuba. Hazel-Atlas has 13 plants.

CAMAS BLEACH PLANT . . . Impco is furnishing equipment for the new kraft bleach plant for the Crown Zellerbach mill at Camas, Wash., now under construction. It will bleach kraft pulp at the rate of 300 tons a day, doubling present kraft bleaching facilities. Cost will be about $2.7 million. The plant will help Crown Zellerbach meet the rising demand for bleached kraft stock for tabulating cards, file folders, envelope papers, frozen food cartons and other food containers by the spring of 1957.

TEXTILE IN LOUISIANA . . . Textile Paper Products, which now operates plants in Crossett, Ark., and Cedartown, Ga., will open a new factory in Bogalusa, La., under supervision of Robert Smith. Included among the products to be manufactured are cores for paper rolls.

OREGON MILL TO USE LODGEPOLE . . . Important step in timber utilization east of the Cascade mountains in Oregon will be taken by small lot purchasers of some 7,800,000 cords of lodgepole pulpwood on national forest lands near Klamath Falls. Manufacturing facilities are planned by Johns-Manville Corp., building an insulating board plant there. Johns-Manville also has bought a considerable acreage of lodgepole pine timberland.

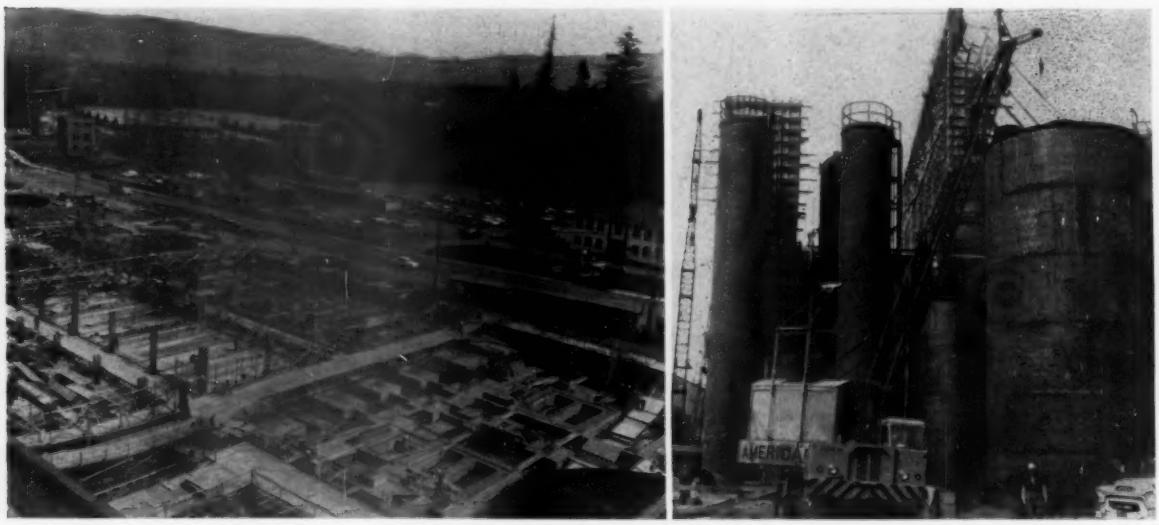
Lodgepole in eastern Washington and the Rocky Mountain region has been used for pulpwood for a number of years. Of recent origin is lodgepole pine cutting for the Oregon Fiber Products plant at Pilot Rock in northeast Oregon.

NEW ASHTABULA, O., PLANT . . . A new corrugated shipping containers plant will be constructed in Ashtabula, O., announces George B. Elliott, president of Inland Container Corp. The plant, at Benefit Ave. and West 47th St. will begin production by the end of this year, at which time the operations will be moved from the company's present Ann Ave. location.

Sharing management of the plant are Robert B. Turner, division sales manager, and W. E. Banks, works manager.

BROWN CO. BUYS OREGON PLANT . . . The bituminized fiber pipe manufacturing plant of Blacfiber Pipe Co., Corvallis, Ore., has been bought by Brown Co., Berlin, N. H. According to A. E. Harold Fair, president of Brown, the present capacity of the newly-acquired mill will add about 10% to present production of Bermico sewer, drainage and irrigation pipe and electrical conduit, now being manufactured at Berlin. Purchase of the Oregon mill will help Brown meet increasing demand for Bermico products on the West Coast and elsewhere. Bernard M. Guthrie, who, with Ralph Chapman, founded the Blacfiber firm, will be manager of the Oregon plant. Sales will be under supervision of Earl Van Pool, manager of Brown Co.'s Pacific Coast sales office in San Francisco.

The Blacfiber Co., about 80 miles southwest of Portland, Ore., began operation in 1955.



Biggest Construction Boom in West Canada's History

Typical of the boom are these scenes: (Left) Some of the $63,000,000 newsprint-pulp expansion underway at Port Alberni, B.C., by MacMillan & Bloedel Ltd. Foundations for bleach groundwood plant, one of 7 new structures which will make this a world's major forest products center. Office at right. (Right) American Hoist & Derrick crane helps build acid tanks and other facilities for another big kraft pulp-newsprint expansion at Elk Falls Co., Duncan Bay, B.C. Some of washer building to be equipped by Dorr-Oliver, is shown.

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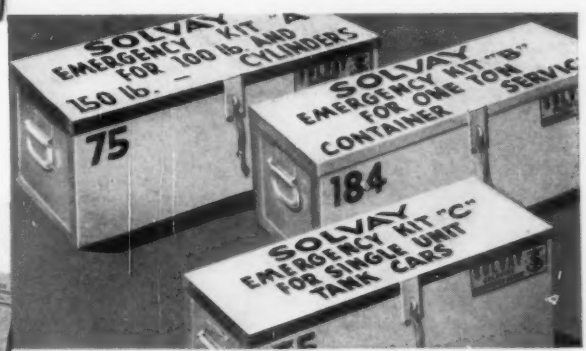
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SOLVAY EMERGENCY KIT "B" FOR ONE TON CONTAINER
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SOLVAY EMERGENCY KIT "C" FOR SINGLE UNIT TANK CARS

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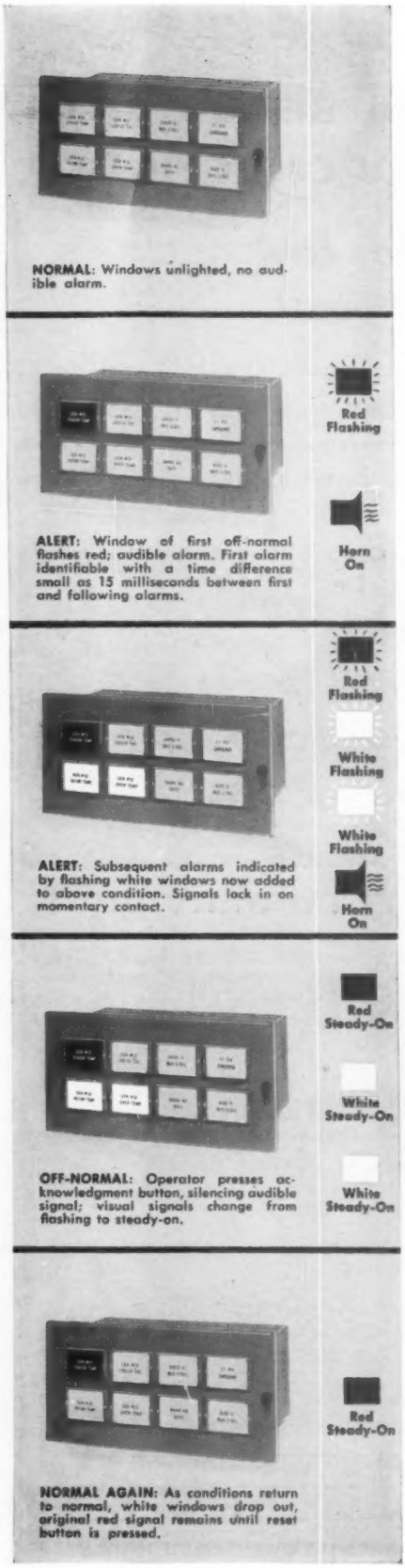

NORMAL: Windows unlighted, no audible alarm.
Red Flashing
Horn On
ALERT: Window of first off-normal flashes red; audible alarm. First alarm identifiable with a time difference small as 15 milliseconds between first and following alarms.
Red Flashing
White Flashing
White Flashing
Horn On
ALERT: Subsequent alarms indicated by flashing white windows now added to above condition. Signals lock in on momentary contact.
Red Steady-On
White Steady-On
White Steady-On
OFF-NORMAL: Operator presses acknowledgment button, silencing audible signal; visual signals change from flashing to steady-on.
Red Steady-On
NORMAL AGAIN: As conditions return to normal, white windows drop out, original red signal remains until reset button is pressed.

Panalarm "VS" Annunciator identifies first off-normal from subsequent alarms for rapid corrective action

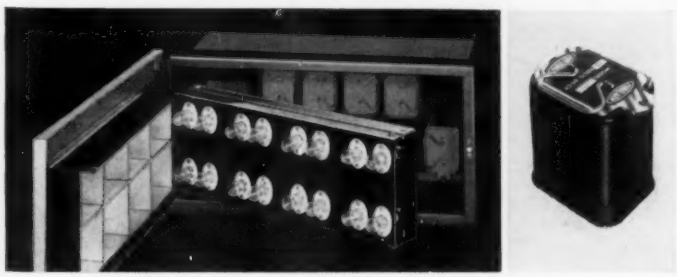
You gain the control advantages of an audio-visual information system, not just an alarm system, with the Panalarm "50VS" Visual Sequence Annunciator. This is particularly valuable when one off-normal condition will cause a "chain-reaction" of off-normals. Typical Panalarm applications are found in the process industries and among users of automatic machinery.

The original off-normal is clearly identified, enabling the operator to take immediate, corrective action. A considerable saving in down-time can often be effected simply by knowing the original source of trouble.

Panalarm "50VS" is completely flexible in setting up various sequential groups. Any number or combination of signals may be grouped as an independent sequence, and the groupings may be changed at any time by simple jumpers on the terminal block. Signals may be either illuminated nameplate or bullseye indicators, combined with a horn, bell or other audible signal. Signaling is simple and positive. A typical sequence is illustrated on the left.

Write for literature on the "50VS" and other Panalarm Annunciator Systems. A Panellit sales engineer will be happy to make a survey of your production operation to determine whether a Panalarm system can help increase efficiency and safety in your plant.

All Panalarm Annunciator Systems are completely modular, permitting future growth and changes. The photographs below illustrate a typical Panalarm Cabinet with illuminated nameplates and the hermetically sealed Panalarm "50" plug-in relay unit. Components throughout are ruggedly built to instrument standards for continuous, dependable duty. Entire Panalarm system is suitable for Class 1, Division 2 installations.



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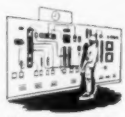
Engineered Information Systems for Industry

Panalog Information Systems



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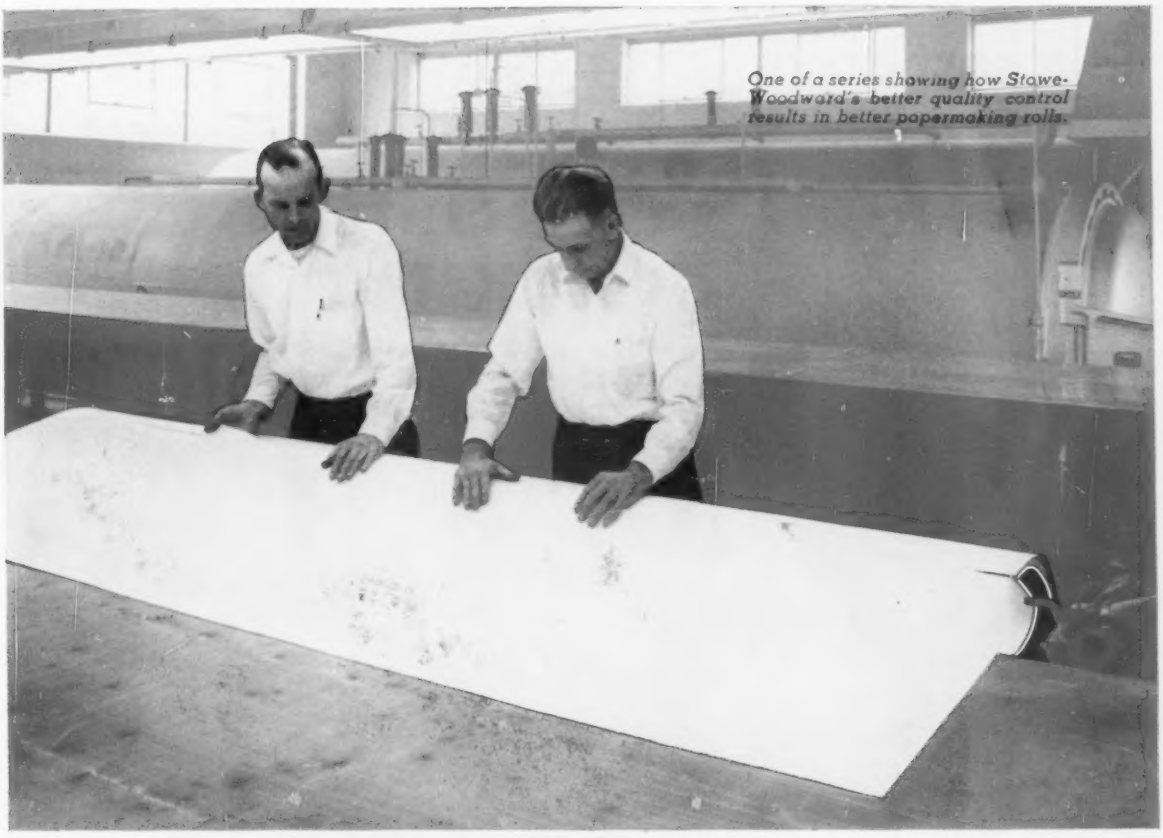

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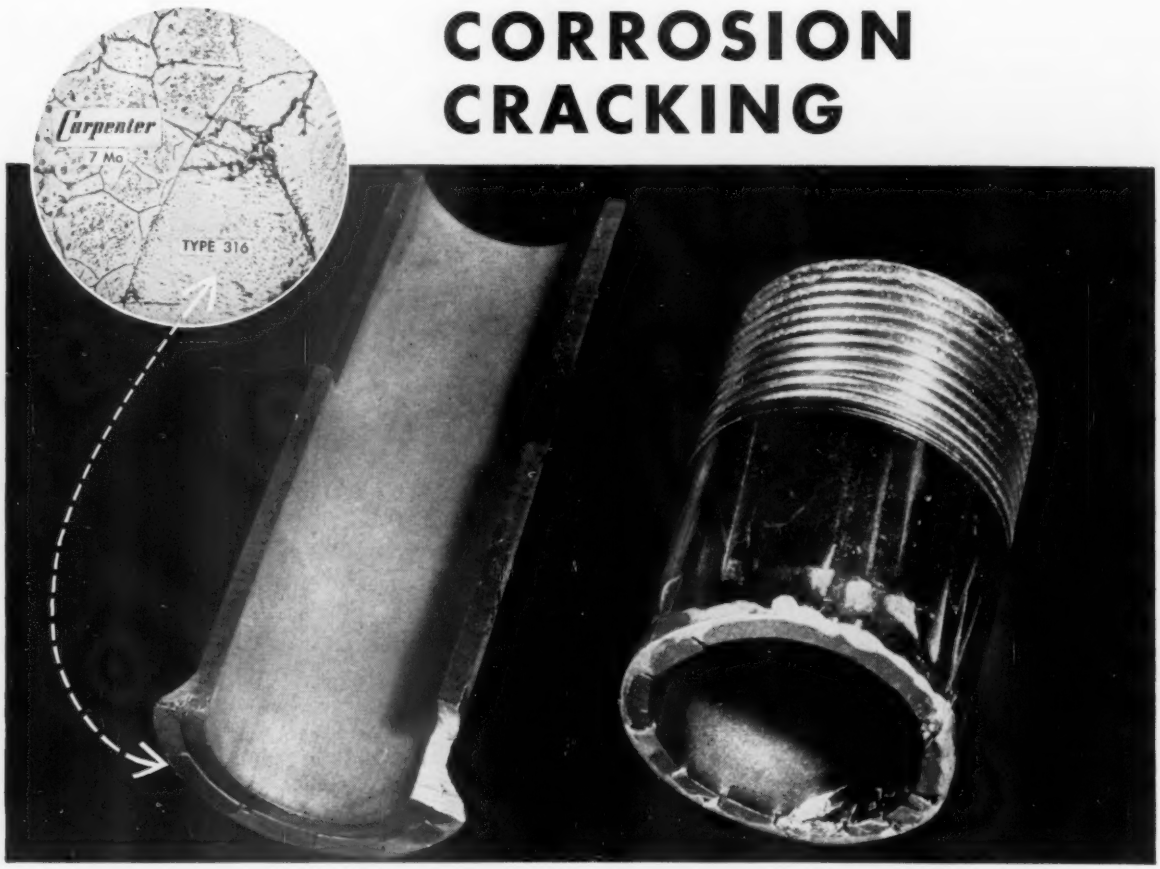

Carpenter 7Mo Stainless Tubing & Pipe

Take a closer look at the above section of Carpenter 7Mo Stainless Pipe welded to a Type 316 fitting. See how stress corrosion cracking has ruined the fitting, just as it has destroyed the piece of stainless pipe at right.

Note how the cracks in the fitting stop abruptly when they reach the 7Mo pipe. And this pipe has already outlasted three such fittings. The photomicrograph shows the unmistakable proof.

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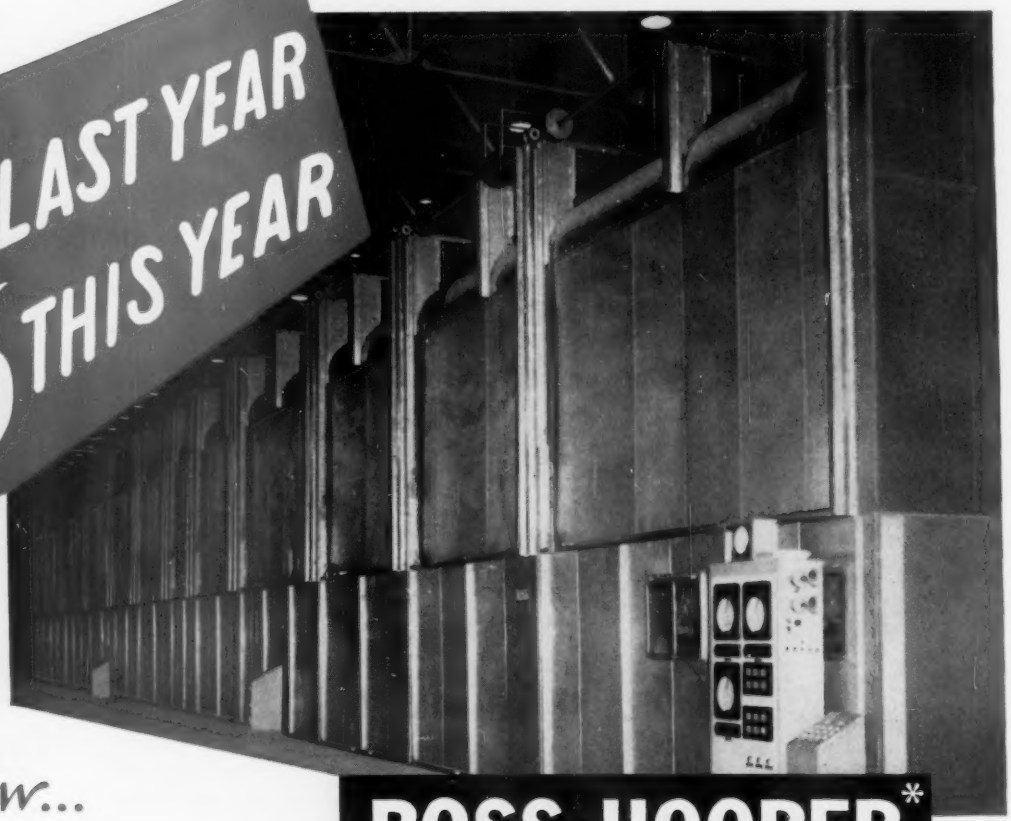

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These digesters, of 7/8" plate, each 15'6" I.D., weight 32,450 pounds, served in producing the first domestic paper from sugar cane stalk.

The plant, designed and built by Brown & Root, Inc., for Valentine Pulp and Paper Company has daily capacity for approximately 50 tons. The venture is Big in Promise since within 100 miles of Lockport, Louisiana, 750,000 tons of bagasse are available each year and this raw product yields up to 50 percent in finished paper.

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MANUFACTURERS AND ERECTORS SINCE 1913

The little machine that dared to run away from home

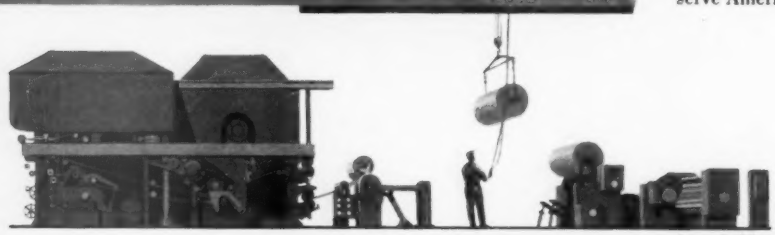
.....is run by a

Home, for a paper-making machine, is usually near its source of raw materials, the forest. But this little machine operates in the heart of a big city (Los Angeles), 1000 miles away from its wood supply.

Why? Because Crown Zellerbach has discovered that it can provide better service by making household paper products where they are consu[illegible]

[illegible] than finished paper) is brought from the forests to the market area. There, the unique little machine makes the pulp into finished and packaged products in one continuous operation—applying the assembly-line principle to paper-making.

Revolutionary ideas such as the little machine enable Crown Zellerbach to help serve America's growing needs for paper.



Our little machine in Los Angeles produces 20 tons of household paper products every day. Similar paper machines are planned for other metropolitan centers in the near future.

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WIDENING THE HORIZONS OF

RELIANCE

Variable Speed Drive

The *Little Machine* opens a whole new marketing concept to the paper industry. In order to put this idea into operation, new concepts of paper machine design were developed. The result was this machine, one that produces more tons of paper per square foot of floor space.

Reliance is proud to have been selected to furnish the drive for the *Little Machine.* Packaged V★S Drives were able to meet the precise standards not only for performance, but for floor space.

Reliance is one of the largest suppliers of paper machine drives in the U. S. The list of our user-customers includes not only Crown Zellerbach, but manufacturers of almost every kind of paper made in the country. Why don't you find out more about V★S Drives? Write for bulletin D-2311. L-1527

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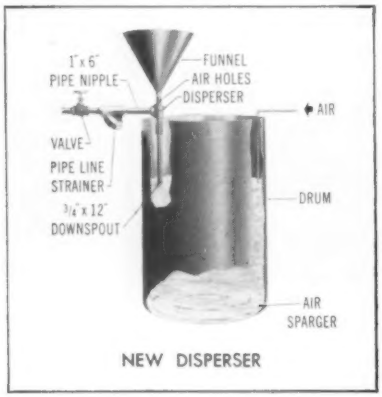
FACTUAL REPORT

on Separan 2610, new high-speed flocculant

FILLER RETENTION—By adding one pound of Separan 2610® per ton of finished paper to the head box feed, one mill reduced titanium dioxide requirements 11%. *Net* savings: $5.25 per ton of finished paper! Other plants report large reductions in filler and fiber losses with as little as 0.25 pounds of Separan 2610 per ton.

FLOTATION TYPE SAVE-ALLS—In a typical unit, use of 1 to 5 ppm Separan 2610 in conjunction with 30% reduction in normal alum loading gave fivefold improvement in effluent clarity. The floc blanket was stabilized, and the entire unit operates more efficiently and at higher capacity.

PROCESS MILL WATER—Another mill increased process water capacity by 50% with 0.15 ppm Separan 2610. In addition, the total flocculant cost was reduced 30%!



NEW DISPERSER

CLARIFICATION OF WHITE LIQUOR—With loadings of 5 to 10 ppm Separan 2610, freshly causticized liquor has shown faster settling and better clarity. Settling rates in several white liquor clarifiers have been doubled at a treating cost of a few cents per ton of pulp.

SETTLING OF BLEACH LIQUOR—Here, too, mills testify to great improvements at only 0.02 to 0.03 pounds per ton of lime. In fact, reports tell of remarkable savings and results in practically every flocculating operation where Separan 2610 has been put in use.

OTHER USES—On a laboratory scale, Separan 2610 shows promise in white water and de-inking waste clarification at 0.05 to 5.0 ppm loadings; in lime mud filtration at 1.0 to 10.0 ppm loadings; and in retaining fines as a wet-end additive at 0.1 to 0.5 pound per ton of paper.

ELIMINATES MANY OLD PROBLEMS—A synthetic of constant uniformity, Separan 2610 is effective over a wide pH and temperature range, is non-corrosive and presents no hazard in normal use. It also requires no preservative . . . and is especially easy to prepare and apply. A new disperser enables you to dissolve large amounts without a mechanical mixer! For a test sample and further technical data, write on your company letterhead to THE DOW CHEMICAL COMPANY, TECHNICAL SERVICE AND DEVELOPMENT, Dept. SC936G, Midland, Michigan.

you can depend on DOW CHEMICALS DOW

AT MANY WELL KNOWN MILLS

Venturi Evaporator-Scrubbers

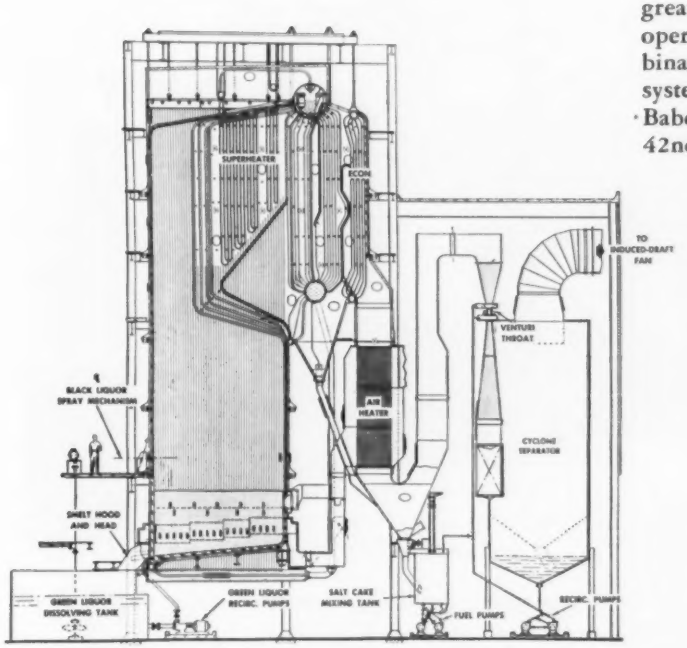
IN B&W RECOVERY SYSTEMS

assure greater operating efficiency

A notable advance in black-liquor recovery is illustrated by the B&W System shown, which features the Venturi Evaporator-Scrubber, and is typical of installations in operation at the Thilmany, D. M. Bare, Western Kraft, Potlatch Forests, Southern Kraft and other pulp and paper plants.

The B&W Venturi Evaporator-Scrubber combines in one unit the concentration of black-liquor with the collection of salt cake fume. Its complete dependability and unusually high efficiency have been thoroughly tested in service for more than three years.

Companies have chosen B&W Recovery Units, equipped with Venturi Evaporator-Scrubbers, for greater efficiency in their black-liquor recovery operations. Whether your mill requires this combination or another, B&W can provide the recovery system that *best* meets your requirements. The Babcock & Wilcox Co., Boiler Division, 161 East 42nd Street, New York 17, N. Y.



VENTURI EVAPORATOR - SCRUBBER LICENSED FROM PEASE, ANTHONY EQUIPMENT CO.

VENTURI-EQUIPPED
B&W Recovery Units
(in operation and on order)

Thilmany Pulp & Paper	Northwest Paper
D. M. Bare Paper	Mead Corp. (Lynchburg)
Western Kraft	Gulf States Paper
Potlatch Forests	National Container
Watervliet Paper	Buckeye Cellulose

Southern Kraft Division
International Paper Co.—4 Plants

ADVANTAGES
of the
B&W Venturi Evaporator-Scrubber

- Simple to operate
- Low in First Cost
- Increases Overall Thermal Efficiency
- Reduces Maintenance Requirements
- Continuous, High, Fume Collection Efficiency
- Minimum Space Requirement
- Reduces Multiple-Effect Evaporator Load

BABCOCK & WILCOX
BOILER DIVISION

P-795

HEAVY DUTY SUCTION SECOND PRESS...
as installed on existing newsprint machines at the Gatineau Mill of the Canadian International Paper Company.

The use of corrosion resistant steel shells for rubber covered suction press rolls has made possible higher nip pressures and the use of larger diameter granite top press rolls and oil hydraulic loading. These improvements also provide a more compact arrangement and easier control. After the installation of this unit, a comparison of the new moisture conditions with those of the original second press showed an increase in water removed of more than half. This results in a sheet entering the dryers about 2% more dry—that is, with 9% less water to be evaporated. A considerable advance in operating efficiency with lower production costs has thus been obtained.

DOMINION ENGINEERING
COMPANY LIMITED
PAPER DIVISION
MONTREAL TORONTO WINNIPEG VANCOUVER

How to CUT YOUR KNIFE COSTS as well as paper

LONG-LASTING, HAIRLINE CUTTING ACCURACY—Special high temper, close grained 866 alloy steel face.

EASY INSTALLATION—Non-distorting, shock-resisting alloy steel back. Holes accurately drilled and tapped.

CLEANER CUTTING—Accurately beveled and expertly honed to a razor edge for standard use or special requirements.

FREE AND EASY CUTTING—Micrometer ground concavity and taper on face for proper clearance . . . to prevent dragging and binding.

You can save on knife re-sharpenings and replacements with Disston 866 Paper Knives. Edges stay sharp, won't roll under or chip out.

Whether the material you cut is tissue paper, cardboard, kraft, machine finish or coated papers—Disston 866 Paper Knives stay sharp. They need less frequent sharpening, few replacements.

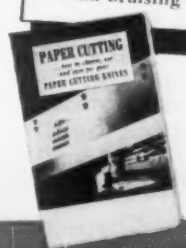
You can be sure, too, that Disston 866 Paper Knives will arrive in perfect condition. Each is oiled, wrapped in moisture-resistant paper and bolted to a special board with cutting edge fully protected.

Your nearby Disston Distributor or Harris-Seybold Branch provides prompt service. Ask today about Disston 866 Paper Knives.

See your distributor, too, for

DISSTON CHIP-MASTER CHIPPER KNIVES

Made of one solid piece of highest quality alloy steel. Ground super-sharp at the knife edge; super-smooth on the knife face. Specially heat-treated and tempered-hard and tough at the cutting edge; softer at slots to absorb shocks. Long edge life; fast re-sharpening; low direct knife cost. Uniform chips; minimum bruising and sawdust.



Get this latest full-of-facts booklet on how to choose, use and care for paper cutting knives. 32 pages. Fully illustrated.

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H. K. PORTER COMPANY, INC.
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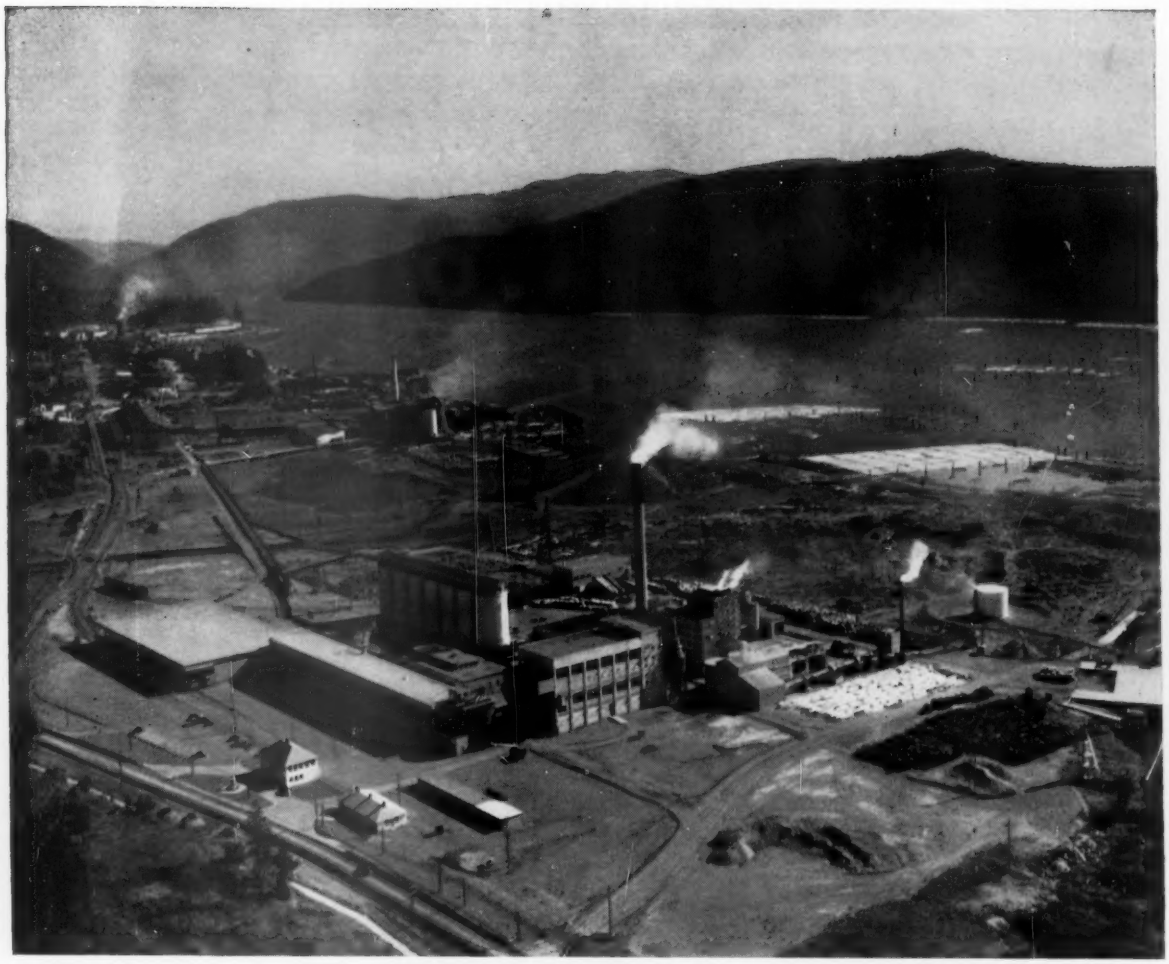

Aerial view of Alberni Pulp & Paper Division, MacMillan & Bloedel Limited

MEAD GIVES YOU A DEPENDABLE SOURCE OF PULP SUPPLY

Successful merchandisers of market wood pulp for 35 years, Mead Pulp Sales, Inc., has grown and prospered with many of the mills in the converting trade. Drawing today from the resources of eight great mills, Mead gives you the finest assurance of a dependable source of supply for pulp.

MacMillan & Bloedel Unbleached Sulphate

Particularly representative of this "dependability" is the Alberni Pulp & Paper Division of MacMillan & Bloedel Limited. The principal supplier of unbleached sulphate to the U.S. market, the Port Alberni, British Columbia, operation has attained that position as a result of progressively increased utilization of its vast natural resources, recognition of the importance of quality, and constant attention to the important factor of service.

Tell us what *your* pulp requirements are, and we'll be glad to have a representative call at your convenience to tell you how we can best serve your needs.

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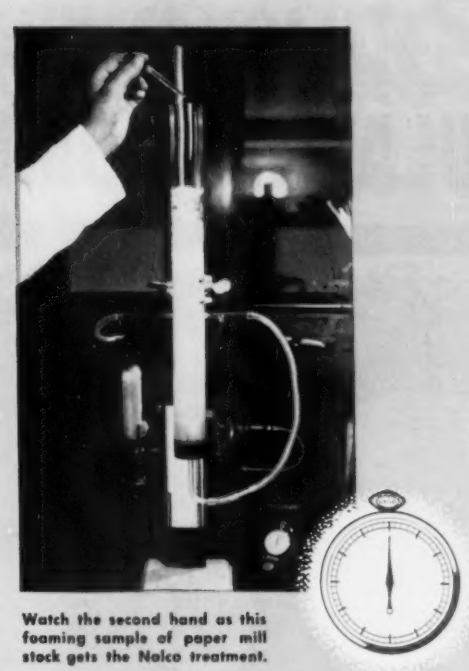
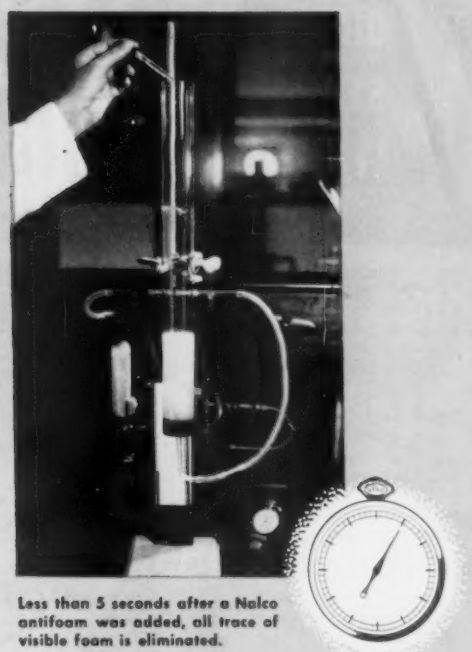
MEAD *pulp*



Watch the second hand as this foaming sample of paper mill stock gets the Nalco treatment.



Less than 5 seconds after a Nalco antifoam was added, all trace of visible foam is eliminated.

furthermore...

Nalco GETS THE DROP ON FOAM YOU CANNOT SEE!

THE simple demonstration above leaves no doubt that Nalco chemicals quickly and effectively eliminate all visible foam.

But here are even more conclusive findings: (1) In a mill where there was *no visible sign* of foam, the application of a Nalco antifoam quickly produced a very substantial increase in screening efficiency . . . and overall production; (2) In another mill, Nalco chemicals solved the problem of an erratic Decker level where there seemingly was no foam. Here, too, production went up through increased Decker capacity.

Simplest explanation of Nalco effectiveness is the dual action — *antifoam* action to prevent bubbles from forming . . . *defoaming* action to combat existing foam! Your Nalco Representative has all the facts, or write direct.

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THE *Nalco*® SYSTEM . Serving the Paper Industry through Practical Applied Science

7 BIG REASONS WHY

Bingham CIRCULATING PUMPS

1. **"Double Volute"** permits use of special over-hung impellers for handling pumpage containing large volumes of *entrained* air.

2. **Extra case strength** resulting from tension member (T) in the **"Double Volute"** casing.

3. **No dilution.** Hydraulic Radial Balance resulting from "Double Volute" design permits shaft to rotate on true center reducing stuffingbox leakage to a minimum.

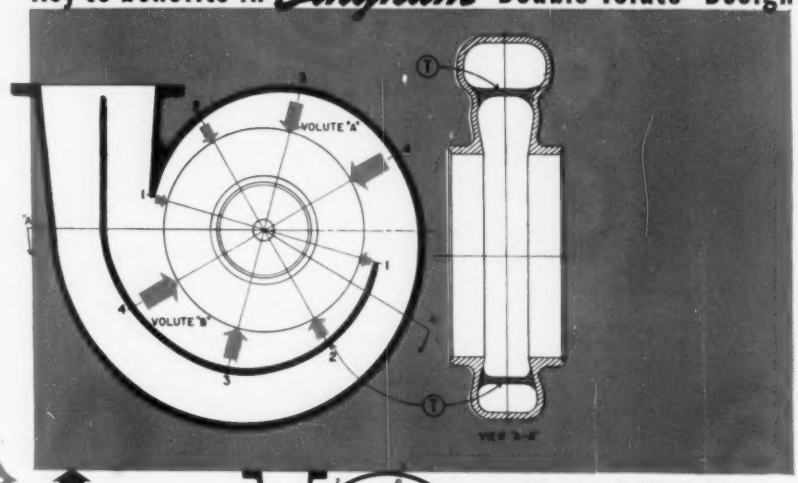
4. **Mechanical Seals.** Hydraulic Radial Balance permits mechanical seals to establish and maintain a uniform track between the contacting faces, thereby insuring long life and trouble-free service.

5. **"Double Volute"** construction eliminates "side push" of rotating element, reducing maintenance of rotating and stationary parts to a minimum.

6. **Unit type bearing** and rotating assembly is easily removable for inspection or repair without disturbing piping or driver.

7. **Spring supported "Floating Base"** assures alignment of pump and driver and protects pump from pipe strains due to extreme temperature changes in Digester Circulating Systems.

Key to benefits in *Bingham* "Double Volute" Design



No "Side Push". Diagram of a "Double Volute" single discharge case of single-stage pump (above) showing the equal pressures on the opposite sides of impeller, insuring low maintenance.

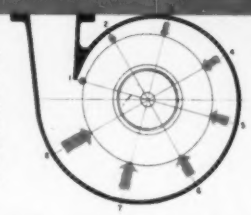


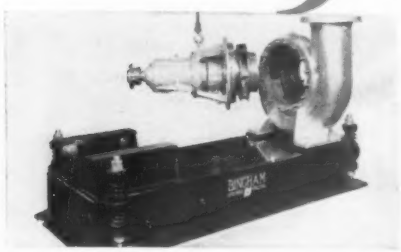
Diagram of "Single Volute" pump case (left) showing unequal pressure at opposite points around the periphery of the impeller. These unequal pressures cause "SIDE-PUSH" on the rotating elements, causing wear of rotating parts and, frequently, high maintenance.

In leading pulp mills throughout the world today, Bingham "Double Volute" Digester Circulating Pumps are selected as standard equipment because of their consistent record over the years for continuous operation with minimum maintenance.

The BINGHAM Circulating Pump illustrated below has established an enviable record throughout the industry, for circulating cooking liquors (sulphite or sulphate). The "Double Volute" design of this pump produces hydraulic radial balance which insures the shaft rotating on true center thus reducing stuffingbox leakage with corresponding dilution of the cooking liquor to a minimum.

All BINGHAM Digester Circulating Pumps are mounted on a spring supported "Floating Base" which assures permanent alignment of pump and driver, and protection of pump from pipe strains common to Digester Circulating Systems, due to rapid and extreme temperature changes.

Bingham "Double Volute" Pumps will best serve your pulp and paper mill operations, as they are now serving leading pulp and paper mills everywhere. Write to your nearest Bingham office for "Double Volute" Bulletin, or send data on your pumping problem.

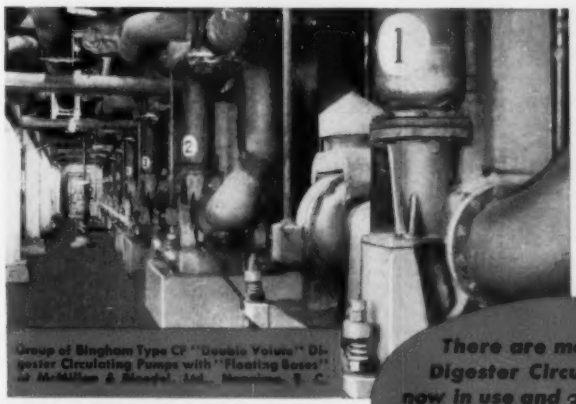


Bingham Type CF Circulating Pumps feature unit type bearing and rotating assembly which is easily removable for inspection or repair.

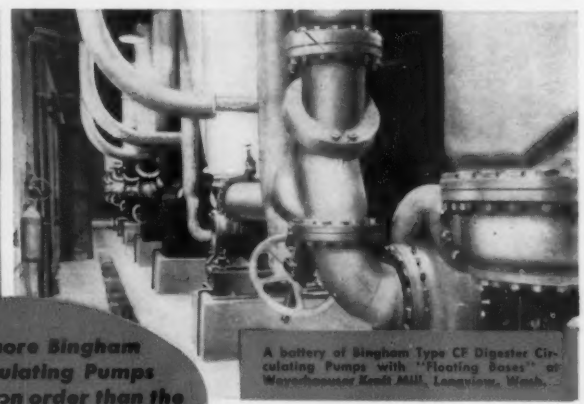
EASY ACCESSIBILITY

Bingham Type CF "Double Volute" Circulating Pump mounted on "Floating Base", for Digester Circulating Systems.

"DOUBLE VOLUTE" DIGESTER ARE USED THROUGHOUT THE WORLD

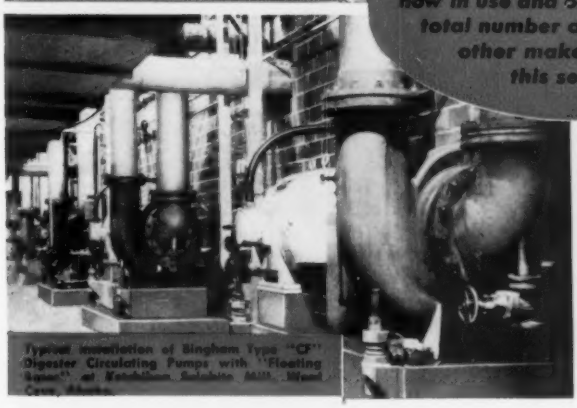


Group of Bingham Type CF "Double Volute" Digester Circulating Pumps with "Floating Bases" at MacMillan & Bloedel, Ltd., Nanaimo, B. C.

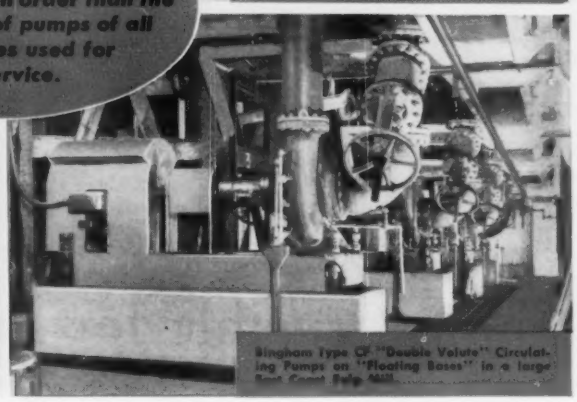


A battery of Bingham Type CF Digester Circulating Pumps with "Floating Bases" at Weyerhaeuser Kraft Mill, Longview, Wash.

There are more Bingham Digester Circulating Pumps now in use and on order than the total number of pumps of all other makes used for this service.



Typical installation of Bingham Type "CF" Digester Circulating Pumps with "Floating Bases" at Ketchikan Sulphite Mill, Ward Cove, Alaska



Bingham Type CF "Double Volute" Circulating Pumps on "Floating Bases" in a large Kraft Export Pulp Mill

New Major Mills recently placed in operation, or currently under construction, equipped with Bingham "Double Volute" Digester Circulating Pumps mounted on Floating Bases:

- Alaska Pine & Cellulose, Ltd., Port Alice, B. C.
- B. C. Forest Products, Ltd., Crofton, B. C.
- Buckeye Cellulose Company, Foley, Florida
- Columbia Cellulose Corp., Prince Rupert, B. C.
- Container Corporation, Brewton, Alabama
- Companhia Portuguesa de Cellulose, Lisbon, Portugal
- Cia Industrial de Atenquique, Atenquique, Mexico
- Gulf State Paper Company, Demopolis, Alabama
- International Paper Company, Camden, Arkansas
- Kajaani Oy., Kajaani, Finland
- J. S. Nicholaiewsky, Sao Paulo, Brazil
- Northwestern Pulp and Paper Co., Hinton, Alberta
- Rayonier, Incorporated, Jesup, Georgia
- Scott Paper Company, Everett, Washington
- Tasman Pulp & Paper, Auckland, New Zealand
- Westminster Paper Company, Westminster, B. C.
- Crown Zellerbach Paper Co., Duncan Bay, B. C.
- East Texas Pulp & Paper Co., Evadale, Texas
- Ketchikan Pulp & Paper Co., Ward Cove, Alaska
- MacMillan & Bloedel, Ltd., Nanaimo, B. C.
- Weyerhaeuser Timber Co., Everett, Longview & Cosmopolis, Washington
- Powell River Paper Company, Powell River, B. C.

Bingham SINCE 1921

DOUBLE VOLUTE PUMPS RADIAL BALANCE

BINGHAM PUMP COMPANY

General Offices: **2800 N.W. Front Avenue, Portland 10, Oregon**

Factories: **Portland, Ore. • Vancouver, B. C., Canada**

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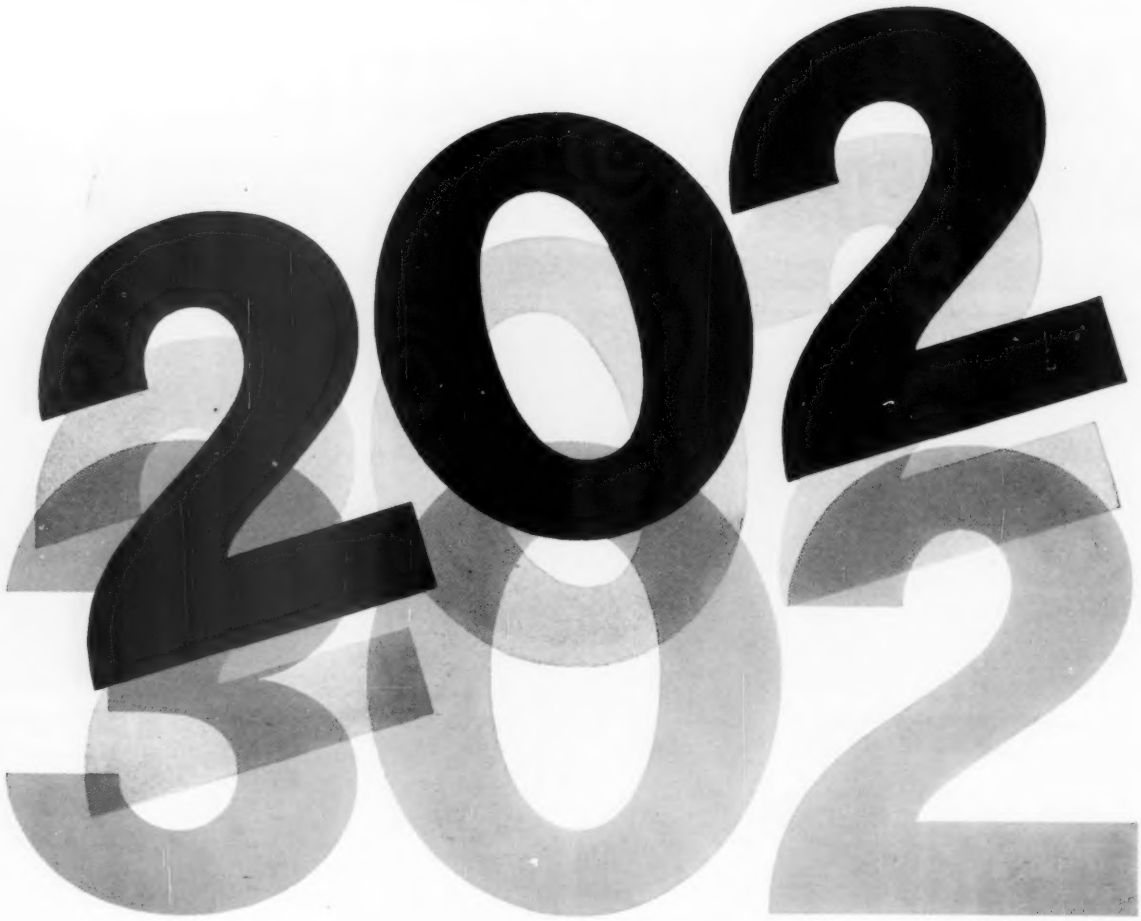
ST. PAUL, MINN.
TULSA, OKLA.
TORONTO, ONT., CAN.
VANCOUVER, B. C., CAN.



now, Crucible low nickel stainless steels that meet many of your needs...

Here are two *new* Crucible grades, Rezistal type 201 and 202 that are similar in quality and properties to types 301 and 302 . . . but with desirable features all their own.

In the annealed condition, for example, Rezistal 201 and 202 have about 10% higher strength than 301 and 302, yet maintain almost identical ductility. This means that these grades can be fabricated with ease equal to their counterparts. In addition, their mill finishes and corrosion resistance to a wide variation of media compare most favorably with 301 and 302.

To sum up: Rezistal 201 and 202 have practically all the desirable properties of 301 and 302, *plus* some of their own. And they're available *promptly* in all forms. Write now for data sheets fully covering the properties of these new stainless grades. *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor—Railway & Power Engineering Corp., Ltd.

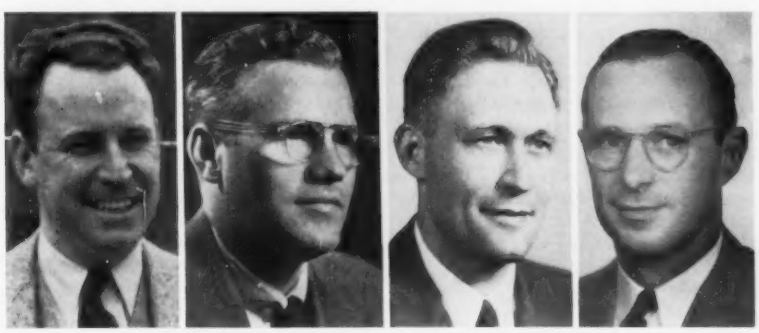
STRICTLY PERSONAL

Southern Sidelights

REUBEN B. ROBERTSON, Sr., president and chairman of the board of Champion Paper & Fibre Co., Canton, N. C., gave his listeners some sage advice when he addressed the Forest Product Research Society in Asheville last month. Said Mr. Robertson: "Before ever making a positive or unequivocal statement . . . find out, if possible, how well informed the listener is. If he is well informed, proceed with caution. If he is ignorant on your subject, pull the throttle wide open on your oracular powers," (for Mr. Robertson's comment see our LAST WORD page). Six men at Bowaters Southern are strictly flying high these days—they formed their own flying club (Name: Bo-Wasp) and bought a brand new red and cream Ercoupe. Club was formed to "promote civil aviation among, for and by employes of Bowaters Southern Paper Corp. and subsidiary companies." Among the members are **JOE GRAY**, safety director, **JACK PIERCE**, instrument dept. **H. L. TONEY**, paymaster, **R. L. CANNON**, paymaster dept.; **JAY STEWARD**, power and steam dept., **JERRY SATCHEL**, mechanical dept., and cafeteria mgr. **AL STEWART**, who serves as president . . . **GEORGE LOCKBAUM**, who was paper mill supt. at the Scott West Coast Div. mill in Everett, Wash., is now paper mill supt. for Scott trade-marked grades at Hollingsworth & Whitney Div. in Mobile, Ala. . . . Board of Directors of Albemarle Paper Mfg. Co. in Richmond, Va., has named **FLOYD D. GOTTWALD, Jr.**, secretary of the company. **CHARLES H. ROBERTSON** is new vice president and **C. RAYMOND HAILEY** was named comptroller. Mr. Gottwald is former production mgr.

CHARLES A. WORDEN, a 21-year veteran with Union Bag, succeeds **A. LAWSON SOPP** as Savannah plant comptroller for Union Bag. Mr. Sopp was named comptroller of the company with offices in New York . . . **JOHN M. MacBRAYNE**, onetime head of industrial engineering dept. at U.B., has been named manager of newly created General Services Div. at Savannah. Union Bag, incidentally, snared first prize for its float in the annual Pine Tree Festival at Swainsboro, Ga. . . . **TAD DUNN**, Union Bag's executive vice president in charge of mfg. also was honored before leaving Savannah for his new office in New York—he won the Savannah Exchange Club Golden Deeds Award, gven once a year to an outstanding Savannahan.

EDWIN E. BURROUGHS has been named assistant director of engineering for St. Regis packaging and converting plants. Since April 1953 he has been asst. to the vice president in charge of multiwall bag manufacturing. Mr. Burroughs will continue to make his headquarters in Pensacola . . . **HOWARD L. CROMWELL** has been appointed plant mgr.



Promotions—North and South—in Scott Paper Co.

Left to right: ROBERT I. THIEME, who has been promoted to Plant Manager of Scott's biggest mill and "home" mill at Chester, Pa., where he had been Asst. Plant Mgr.-Services. He came east from Everett, Wash., where he was with Soundview Pulp Co. for many years before it merged with Scott, as Technical Director, and was later Mgr. at Anacortes, Wash. He is a graduate of U. of Washington, Seattle. JOHN W. McNICHOL, former Plant Mgr. at Chester, is now fulltime Executive Assistant to Vice President Dennis Cousins at Scott's Hollingsworth & Whitney Div. plant in Mobile, Ala., where extension is under way. JOSEPH W. SHIMP, Plant Mgr. at Fort Edward, N.Y., has been appointed new Plant Mgr. at the Mobile mill succeeding Edward P. Wood, who has retired as Plant Mgr. there. HENRY S. GODSHALL JR., member of the staff of Henry Dennis, Asst. Vice Pres. of Woods Division, Scott West Coast Div., Everett, Wash., moves to Marinette, Wis., as new Plant Mgr. of the Marinette, Wis., Scott subsidiary mill. R. H. SEARS (not in the pictures), was Mgr. at Marinette and he moves to Fort Edward as Mgr.

In Southern Spotlight

CHARLES W. WHITE (left), has been appointed Director of Sales of Sonoco Products Co., replacing the late W. H. Miller. Mr. White was formerly associated with Talon, Inc. SETH M. SNYDER (right), is new Manager of the Charlotte, N. C., Div. of Babcock & Wilcox boiler division. Charlotte office has also been elevated to full district office status "to keep pace with the extraordinary development and growth of the Carolinas."

of Stauffer Chemical Co's Freeport, Tex., operation. He's a graduate of U. of Maryland, was once mgr. of the Harvey, La., plant and more recently has been engaged in process development work at Niagara Falls . . . **LAWRENCE F. DIXON**, who resigned June 2 as general mgr. of the Ecusta Paper Div. and vice president of Ecusta Paper Corp., (a subsidiary of Olin Mathieson) died in Whiteville, N. C. Mr. Dixon joined Harry H. Straus, founder of Ecusta, in 1935 to develop a domestic fiber supply.

CHARLES HENTSCHELL, vice pres. and business mgr. of the St. Louis Post-Dispatch, has been elected a director of Coosa River Newsprint Co., replacing Stuart M. Chambers, who retired . . . **ROBERT S. ENNISS** is new sales mgr. at International Paper's Georgetown shipping container plant. He has been asst. sales mgr. there since 1935 . . .

BRANDON SALES, INC., at Greenville, S. C., will represent Tidland Machine Co. of Camas, Wash., manufacturers of lug and leaf type pneumatic shafts. Announcement was made by **C. R. TIDLAND**, pres. of the machine firm, and **KENNETH FRYFOGLE**, pres. of Brandon. Brandon Sales is represented in the South by **R. S. (BOB) DAVIS** . . .

Short Shots: **HOWARD J. DYER**, formerly with Chase Bag Co., now on the staff of National Container at Valdosta . . . **F. M. HAMMACK** moved from Buckeye Cotton Oil Co. to Crossett Paper Mills, Crossett, Ark. . . . **W. C. CHAPMAN** has been promoted to asst. mgr. of Union Bag's technical div. and **RICHARD R. CHASE** is now supt. of the tech. div. **GLENN C. KIMBLE** manages the tech. div. . . . **FRED MULLINS**, once with Great Northern Paper Co., is now engineer at East Texas Pulp & Paper Co. . . . **WILLIAM E. REINSCHMIDT**,

technical salesman for American Cyanamid Co., has been transferred from Mobile to Monroe, La.

Three of Crossett Paper Mills' young pulp mill technicians were recently promoted—**DREW JOHNSON** and **EARL JONES** both moved up to tour foremen from assistants to the pulp mill supt. and **BILL WEBSTER** moves to tour foreman from bleach plant operator . . . **LOVELL CUSHING**, onetime mgr. of Brown Co's pulp division, has been appointed pulp mill coordinator of Hudson Pulp & Paper Corp., according to **DAVE KUHE**. Lovell was technical dir. of North Carolina Pulp Co. from 1954 until his appointment at Hudson.

Midwest Medley

CHARLES R. SEABORNE, executive vice president of Thilmany Pulp & Paper Co., and his "good right hand," **ARTHUR M. SCHMALZ**, general production manager, have returned from an extensive trip to Europe. They landed in Scotland, covered Britain, France, West Germany and Scandinavian countries. Being true-blue Wisconsinites, the only frustrating time they had was landing in Denmark on a "bone-dry" holiday when they couldn't get a glass of beer—either Milwaukee brand or Danish. As a builder of mills since 1918 and inventor of many processes, Mr. Seaborne was keenly interested in Europe's mills. Mr. Schmalz is a 51-year veteran at Thilmany, having started there scraping screens and part-time chauffeuring **BOB WERTHEIMER'S** (Longview Fibre) father, who was then Thilmany president.

RALPH W. WEHMHOFF, new Middle West sales representative for St. Regis woodpulp, moved his wife and daughter to Chicago in June and they are living in a southern suburb, Lake Forest. On July 10 they celebrated their daughter's first birthday and on July 30 their first wedding anniversary. Mr. Wehmhoff was born in Okanogan county, Wash., and worked in various jobs in the Tacoma St. Regis mill. . . . Problems in selling or acquiring homes these days are tough and they delayed moves of **DAVE BRITTAIN**, executive v.p. of Mead Pulp Sales, and **WILLIAM McNAIR**, who heads pulp sales for St. Regis, to New York City. The McNairs and their son, moving to a Larchmont, N. Y., home from Cincinnati, will make it in September. The Brittains and their daughter, from Chicago, were probably going to make the grade sooner, but later than planned. . . . **C. L. (CHUCK) McCLURE**, Appleton Wire Works rep in Middle West, who flew with Gen. Doolittle in Tokyo bombing which helped turn the tide of WWII, and **BILL McNAIR**, who flew "The Hump" in China, had a chance recently to trade notes in a Wisconsin rendezvous.

JOSEPH J. FIORI Sr., formerly of Stone Container Corp., is vice president of Capitol Waste Materials Co., Dayton, O. . . . **MILTON A. LEFEVRE**, formerly with the Sulfite Pulp Mfrs. Research League, is now with Marathon at Menasha, Wis., as process engineer. . . . **ROBERT H. NITZ** is paper chemist for International Paper Co. in Kalamazoo. He graduated from Western Michigan College in paper technology. . . . **NORMAN TOUCHETTE**, formerly with Fulton Bag & Cotton Mills, has joined Monsanto Chemical in St. Louis as research chemist.

DR. R. A. DIEHM has been promoted to a full professorship in paper technology at Western Michigan College. . . **HAROLD H. STIFT** is new manager of Crane Co.'s Chicago branch, succeeding **THOMAS D. KELLY**, who becomes midwest dist. mgr. . . **DONALD R. MacCRIMMON** succeeded Mr. Stift as asst. mgr. . . . **JERROLD G. HEDIN** has joined Appleton Woolen Mills as Lakes States sales rep. He was formerly tech. dir. of Container Corp's Wabash, Ind. plant. He was with Glidden Co., Chicago, as sales rep and later represented Semet Solvay Petrochemical Div., Allied Chemical & Dye Corp., Chicago, as salesman.

BOB WEYENBERG left the Institute of Paper Chemistry recently to take up a new position at Marathon Corp. He will be working with ex-Instituters **BEV WYDEVEN** and **DARWIN BORK**. . . . **DR. JOHN O. BURTON** is new director of research of Minnesota and Ontario Paper Co. He succeeds **M. S. WUNDERLICH** who retired but continues on special assignments. Dr. Burton started at Mando in 1937. He is a graduate of Hamlin Univ. of St. Paul, and the U. of Maryland. . . . **JOHN DAM**, formerly gen. supt. of Monarch Book Mill, becomes chief chemist, Allied Paper Mills (div. of Thor Corp.). **MORRIS CARL**, formerly asst. gen. supt. of Allied's King Book Mill, has been named gen. supt., of the Monarch Book Mill. . . . **ARTHUR F. KUEHN, Jr.**, has been appointed asst. res. mgr., of Manhattan Rubber Mfg. Co., Neenah, Wis. **ARTHUR A. CAMPBELL** is res. mgr.

WILLIAM COOK, beater engr., Bergstrom Paper Co., is enjoying the pleasures of a 14-foot rowboat presented to him at the annual employes meeting in honor of 50 years service. He became beater engineer in 1914 when the "new" mill was completed and has held that job since. No one showed him how to tint stock to perfection—that was a self-acquired trait he developed many years ago when the company had "all the colors in the rainbow, from ox-blood to fawn."

REUBEN H. ROBERTSON, Jr., U. S. Deputy Secretary of Defense, on leave as president of Champion Paper & Fibre

Larry Sabatke Named Manager; Petersen to Quickway Post

LARRY S. SABATKE (left), dressed for relaxation in this PULP & PAPER photo, is the new Manager of Marathon Corp.'s two-machine Ashland, Wis., tissue mill. He succeeds Ben H. Metternich, now retired, who had held the position for 30 years. He had been with the company 48 years. Mr. Sabatke has been General Paper Mill Supt. of Marathon's Rothschild, Wis., mill.

THEODORE S. PETERSEN (right), has been appointed Assistant Sales Mgr. for "Quick-Way" Truck Shovel Co., Denver, Colo. From New York State, he received his advanced education at Guggenheim Institute and later served as a Lt. Colonel in the U. S. Air Force.

Elected, Appointed to New Posts

E. NOBLES LOWE (left), Secretary and General Counsel of West Virginia Pulp and Paper Co., has been elected President of the New York group of the American Society of Corporate Secretaries. He succeeds MALCOLM BLACK, Secretary-Treasurer, Union Bag & Paper Co.

GORDON K. STORIN (middle) of Hooker Electrochemical Co., Niagara Falls, N. Y., has been elected Chairman of Titanium Pigment Co. Mr. Storin was with Niagara Alkali before it merged with Hooker.

CHARLES W. KIMBEL (right) of Arlington, Mass., is new Sales Representative in New England and northeastern New York for The Carpenter Steel Co. Alloy Tube Division, Union, N. J. He was a sales executive for wholesale booksellers. He served in the Marines and graduated from Rutgers.

Co., recently inspected Nationalist China's military installations in southern Formosa and discussed defense questions with American and nationalist military leaders . . . **OLIN W. CALLIGHAN,** manager of paper sales for Minerals & Chemicals Corp. of America, has been presented with an honorary master of science degree by Western Michigan College . . . **R. W. SCHNEIDER,** former Infilco service engineer, has been promoted to field sales engr. for Indiana, Michigan and Ohio. He replaces **J. P. MANGER,** transferred to Infilco headquarters, Tucson, Ariz.

J. LESLIE SENSENBRENNER has retired from Kimberly-Clark after more than 45 years. He has been corporation secretary since 1952. . . **RICHARD PHARO** has been named tour supervisor in the Nekoosa mill. He started in the Nekoosa machine room in August 1920. His son, **DUANE,** works in the mill . . . **RUSSELL ELSTON** recently joined Nekoosa-Edwards as a chemical engr. During the past two years he has worked at Potlatch Forests Industries, Lewiston, Idaho. Russ, his wife and four year old son plan on living in Port Edwards.

Notes from Northeast

ROBERT E. MARCH, technical control director at Scott Paper Co's. Chester, Pa., mill, is now assistant plant manager-services. **HENRY E. BECKER,** assistant control director, becomes technical control director. **PATRICK J. SULLIVAN,** process control engineer at Fort Edward, who has been on leave to attend the Institute of Paper Chemistry at Appleton, takes over as assistant technical control director. . . . **PAUL MAYFIELD,** a director of Hercules Powder Co., is now a vice president and member of executive committee. **J. B. JOHNSON,** vice president, has resigned from the exec committee, continues as vice president and director. **G. FRED HOGG** becomes general manager of the Naval Stores dept.; **JOHN H. LONG** succeeds retiring **R. ROCKWELL** as general manager of the Paper Makers Chemical Dept.

ABNER STEWART, chief electrician, St. Regis Paper Co's. Deferiet, N.Y. mill, recently retired. . . . **RICHARD K. STRAPP** has joined the sales staff of Carthage Machine Co., covering Canada and northeastern U.S., says **A. E. WARDWELL,** president. Mr. Strapp is a grad of Queens U., Kingston, Ont., and has worked with Bowaters at Corner Brook, Nfld. He was recently with the Pulp & Paper Research Inst. of Canada on chemical pulping of woods and agricultural residues. . . . **DR. WILLIAM L. EVERS** is now assistant manager of fiber research, Celanese Corp. of America.

HAROLD DESMOND is now assistant master mechanic to **HENRY JOBBER** at Keyes Fibre Co. . . . **DR. WILLIAM F. RYAN,** vice president, director and senior consulting engineer, Stone & Webster Engineering Corp., was recently nominated as president of American Society of Mechanical Engineers. . . . **JOHN E. (BILL) BATES** has beeen promoted to New England branch manager, Fairbanks Co., 520 Atlantic Ave., Boston. . . . **ALBERT L. MORRIS** has beeen promoted to new post of director of company relations, Dorr-Oliver Inc. With retirement of **WILLIAM HAROLD OLIVER** as vice president for public relations and personnel after nearly 46 years of service, Mr. Morris assumes over-all responsibility for all public relations and personnel functions.

RANDY HEATH, Bulkley, Dunton & Co., is celebrating the birth of twin girls. That makes five for Randy, all girls. . . . **HARVEY B. MANN,** founder of Mann Engineering Co., sales organization which represents Fuller Co., died recently. . . . **PAUL R. SYNAVE, CARTER H. McINTYRE** and **CHARLES BUENZLI** have been promoted to plant supts. of folding carton operations at three divisions of Robert Gair Co., Inc. Mr. Synave will be at Gair Cartons Div., Piermont, N.Y.; Mr. McIntyre at American Coating Mills Div., Elkhart, Ind. and Mr. Buenzli at Thames River Div., Uncasville, Conn. **WILLIAM ATKINSON, JR.,** has been named safety supervisor of plant operations for Gair, and will headquarter in N.Y.C. reporting to **CHARLES H. MASON,** safety engineer and training director.

GORDON K. STORIN, Hooker Electrochemical Co., is new chairman of Empire State Section of TAPPI, succeeding **WILLIAM R. WILLETS,** Titanium Pigment Corp. First vice-chairman is **GRANT G. COLE,** Finch, Pruyn & Co.; **J. WAYNE MORROW,** Newton Falls Paper Mills, Inc., is second vice chairman; **FRED W. O'NEIL,** Syracuse U., third vice chairman; and **RALPH N. PRINCE,** F. C. Huyck & Sons, secy-treas. . . . **RONALD J. MULLIGAN** is now assistant product manager, Insulrock Div. of Flintkote Co., advises **H. H. WHITTEMORE,** general building materials sales mgr. **KENNETH W. BRITT,** research manager of the paper section, Scott Paper Co., has been named to new post of associate director of chemical research. **PHILIP E. NETHERCUT** assumes post of chemical research administrative manager. **RICHARD W. SCHUTTE,** development project leader in the paper section, is now group leader and **WILLIAM R. POWERS,** research project leader in the pulp section, takes over as group leader. **CHARLES S. BENZ** goes to a new post of research product coordinator in the paper section.

Following a long career which included public, private and association forestry and logging, **ELIAS T. CLARK,** secretary-manager of the Pacific Northwest Loggers Assn., Seattle, died June 1. Mr. Clark was well known throughout the forest industries for his work in the field of logging safety. He presented a paper at Paper Week two years ago entitled "Accident Cost Reduction in Logging," which was printed in the PULP & PAPER Pulpwood Annual for 1954. "E. T." was a forestry graduate of Yale '07 and earned a master's in '08. He served with the U. S. Forest Service and was a logging supt. on the west coast.

Coast to Coast—in News of the Industry

Left to right: ED L. CROWLEY has moved to Atlanta, Ga., to represent Infilco Inc., specialists in water and waste treatment for pulp and paper mills, in the Southeastern States. Mr. Crowley formerly was Bleach Plant Supt. at The Northwest Paper Co., and has had long experience in this industry. He has been with Infilco almost five years. ANDREW C. PERRIN, West Coast District Sales Mgr. for Reliance Electric & Engineering, who helped set up its new $500,000 Burlingame, Calif., assembly plant and distribution center for Reliance and Reeves Pulley division products. For Reeves, Robert G. Sullivan assisted in setting it up. Mr. Perrin is a Purdue graduate, with Reliance for 9 years. WILLIAM J. ELKINS, McConnellsville, N.Y., has joined Sandy Hill Iron & Brass Works as sales engineer serving the territory in New England and part of New York, announces Loren G. Gallup, Asst. Vice Pres. in charge of Sales. Mr. Elkins is a graduate of Cornell and served in both wars, retiring as Colonel. GEORGE A. OECHSLE JR., appointed Asst. Mgr. of the American Coating Mills Division, Elkhart, Ind., of Robt. Gair Co., Inc. He joined Gair in 1946 and was Mill Supt. since 1952 at Piermont, N.Y. A. E. PENNEY, formerly with Brown Co. at Berlin, N.H., has been appointed Manager of Pulp Mfg. for Columbia Cellulose Co. and Celgar, Ltd., the two British Columbia subsidiaries of Canadian Chemical & Cellulose, Canadian affiliate of Celanese Corp. of America. Wentworth Brown, Vice Pres. and Gen. Mgr. of the two British Columbia companies, was associated with Mr. Penney when both were at LaTuque, Que.

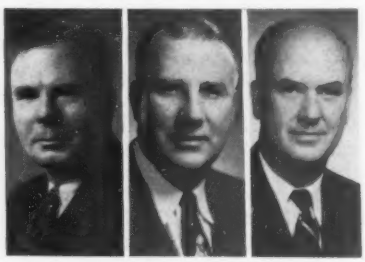
STRICTLY PERSONAL

Far West Flashes

FRANCIS DENNIS has become paper mill supt. of Scott trademarked grades at the Everett, Wash., mill succeeding **GEO. LOCKBAUM**, new paper supt. at the Hollingsworth & Whitney Div. mill at Mobile, Ala. . . . **THOMAS McLAREN**, a director of Crown Zellerbach and for 21 years vice pres. and treas., died recently after a heart attack in his Hillsborough home. He was 69. Born in Blairgowrie, Scotland, he came to the U. S. in 1910 and joined Crown Zellerbach in 1930. . . **R. W. GROTT**, a graduate of M.I.T., is being transferred to Seattle to take over that territory for **KEN JONES** who is being transferred to the Southeastern territory of J. O. Ross Engineering Corp. Mr. Grott has been with Ross Engineering for seven years, formerly at Boston and more recently at Los Angeles . . .

PAUL E. CHRISTMAN has been named a turbine specialist for General Electric's Pacific Southwest Dist. with the home office in Los Angeles . . . **FRANK R. PERRY** has been appointed manager of Crane Co.'s. Los Angeles branch, succeeding **DARELL R. NORDWALL**, who has become northeastern dist. mgr. . .

T. R. (TED) McGLOTHLIN, maintenance foreman, Crown Zellerbach, Camas, recently received his 25-year award. Another brother, **LEONARD D.**, kraft mill supt., has completed 30 years. Both have unbroken service. Another pair of brothers, **GLEN** and **VERN RAMSEY**, both on paper machines, will qualify for 35 year pins within a few months.



In Fibreboard-Pabco Merger

WILLIAM L. KEADY (left), President of Fibreboard Paper Products Corp. (formerly Pabco), San Francisco, announces a new divisional organization for his company and its wholly owned subsidiary, Fibreboard Products Inc. MARK E. SANFORD (middle) is new Gen. Mgr. of the Paperboard Division, and B. P. ALTICK (right) is appointed Vice President-Marketing.

General managers of other operating divisions: J. H. Grady, Central Fibreboard Div.; J. A. McDaniel, Southern Fibreboard Div.; George L. Langtry, Northern Fibreboard Div.; Dana F. Nelson, Eastern Fibreboard Div; R. R. Galloway, Building Materials Div.; E. W. Fish, Floor Covering Div.; Clay Lilleston, Paint Div.; Jesse C. Voiles, Insulations Div. Also appointed were B. R. Colkett, Vice Pres.-Secretary; A. S. Halley, Vice Pres.-Finance; J. F. Havard, Vice Pres.-Mfg.; W. K. Spence, Vice Pres.-Personnel.

Column from Canada

ALEX G. BROWN, U. of Toronto graduate who has been sales manager of the Winnipeg division, Martin Paper Products, Ltd., Powell River Co. subsidiary, has been made sales manager for the entire Martin organization, with head office in New Westminster, B. C. . . . **DR. A. H. VROOM**, formerly with Weyerhaeuser Timber Co. at Longview, Wash. has been named director of research for Consolidated Paper Corp., Montreal.

D. R. BERT BLAIR, personnel relations director for British Columbia pulp and paper industry, has been elected president of the Canadian Club in Vancouver . . . **PAUL E. COOPER**, former president of Pacific Mills Ltd. in Vancouver, has been elected to the board of directors, McLennan, McFeely & Prior, Ltd., wholesale hardware house.

W. T. POUND has taken over his new duties as vice president, engineering, St. Lawrence Corp., and he will spend much of his time visiting the company's mills and logging operations . . . Manager of Alaska Pine & Cellulose Co's Rayflo plant at Vancouver is **A. J. VALLEY**, formerly with Koppers Co. . .

G. J. LANE is now general manager of the power company at Baie Comeau, Que., as well as vice president of Quebec North Shore Paper Co., to which post he was recently appointed after serving as divisional manager at Baie Comeau, Que., for nearly 20 years.

EUGENE DE LUCA, manager cellulose division, Alaska Pine & Cellulose, Ltd., in Vancouver, B. C., has resigned, and will become manager of the Electric Reduction Co., now building a new plant at North Vancouver. . . **ROY EVANS**, general superintendent of Columbia Cellulose Co. since the start of operations at Prince Rupert, B. C., has resigned and will assume a position in the industry in Eastern Canada. . . .**R. J. A. FRICKER**, former production manager for Dominion Bridge Co. in Vancouver, B. C., has been appointed assistant to the vice president and managing director at the head office in Lachine, Que.

CHARLES R. CORNELL, for several years gen. mgr. of Packaging Assn. of Canada, has been named asst. to gen. mgr. of container div., Bathurst Power & Paper Co. . . . **T. G. SHEPHERD**, formerly groundwood supt. of Donnaconna Paper Co. in Que., has been made prod. supt. of the company's pulp and paper division. **THOMAS DOBSON**, formerly chief chemist, is new groundwood supt.

"HEAP BIG CHIEF" . . . When Managers from all Scott Paper Co. mills in the U. S., Canada and Mexico got together recently at Harrison Hot Springs, B.C., the Indian title of "TYEE" meaning "BIG CHIEF" was bestowed upon Exec. Vice Pres. RAYMOND C. MATEER (left), by Pres. EDWARD J. GAYNER III (right), of Brunswick Pulp & Paper Co. Mr. Mateer was named chief of the "Scott production tribe," which utilized Indian-lore and trappings for background theme of meetings.

E. W. PREISS, formerly of Alaska Pine & Cellulose, has joined Canadian Forest Products pulp division at Port Mellon, B.C., where **D. W. PITMAN** has been promoted to chief steam plant engineer. . . . **MONTY MARLER**, pulp sales, MacMillan & Bloedel, has returned to head office in Vancouver, B.C., after a six weeks' tour that took him to Mexico, Cuba and New York, where he attended Paper Week.

Increases Staff in West

O. M. "DOZE" CORNELL (seated) Pacific Coast Regional Manager of American Cyanamid-Paper Chemicals Div., Portland, Ore., and ROGER L. BARKER, Technical Rep., who joined western staff April 1, having previously held same title at Division's Kalamazoo, Mich. offices. He spent a year at Cyanamid's Paper Chemicals Laboratory in Chicago before that.

Jones

LEVIATHAN

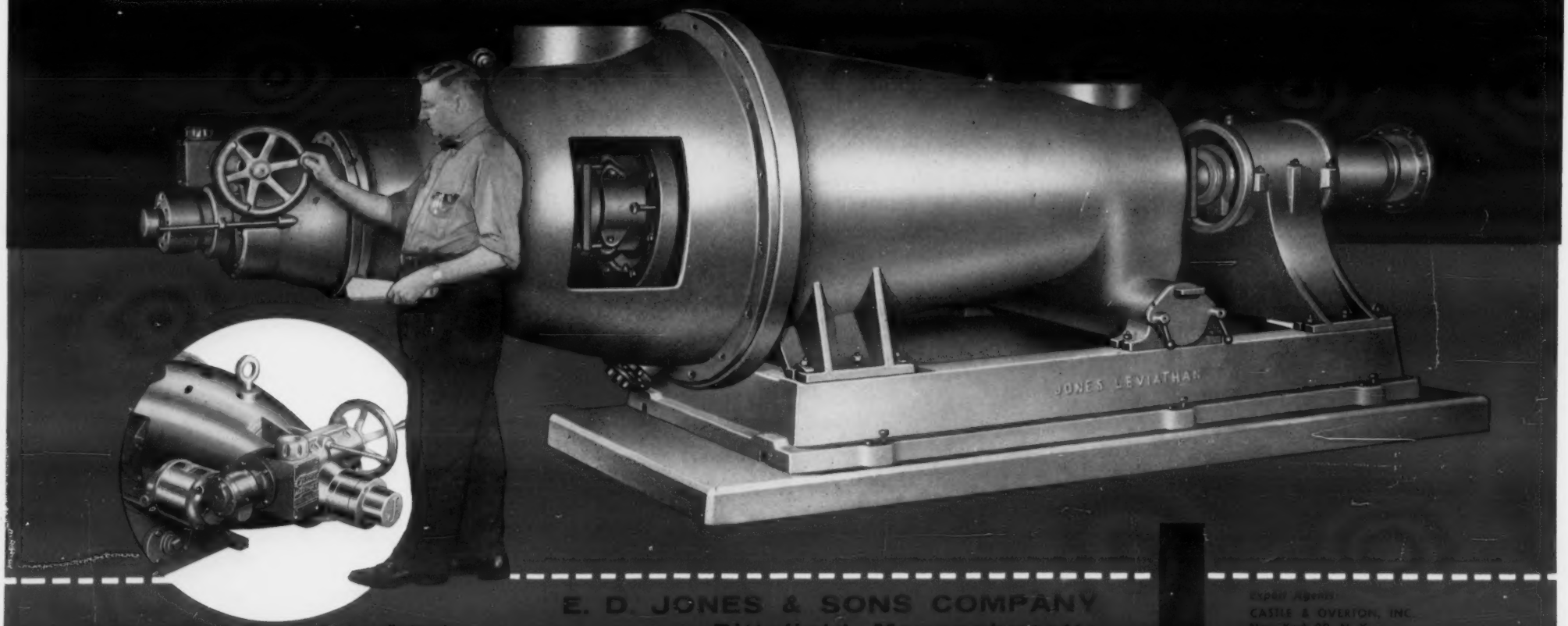
IMPORTANT NEWS FOR LARGE JORDAN USERS

The Leviathan — largest of the Jones Jordan "family" has been completely redesigned.

Furnished with the new Adapta-Plug, Jones one-piece Fulbar shell filling, and Worm Gear Plug Adjustment, the Leviathan now assures even better control, great flexibility and very economical use of power.

For large tonnage users, this big machine — utilizing up to 700 HP — offers significant economies in first cost, in floor space, in simpler piping, fewer motors, and minimum maintenance cost.

Ask your Jones representative for details — or write for Bulletin EDJ-1017.



ACCU-SET(R) Completely automatic plug adjustment

Available on all Jones Jordans (at slight additional cost) this completely reliable control system provides any desired degree of control, assures uniform treatment, and positive protection for plug and shell bars, even if power or stock flow fails. Write for Bulletin EDJ-1057.

E. D. JONES & SONS COMPANY
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BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

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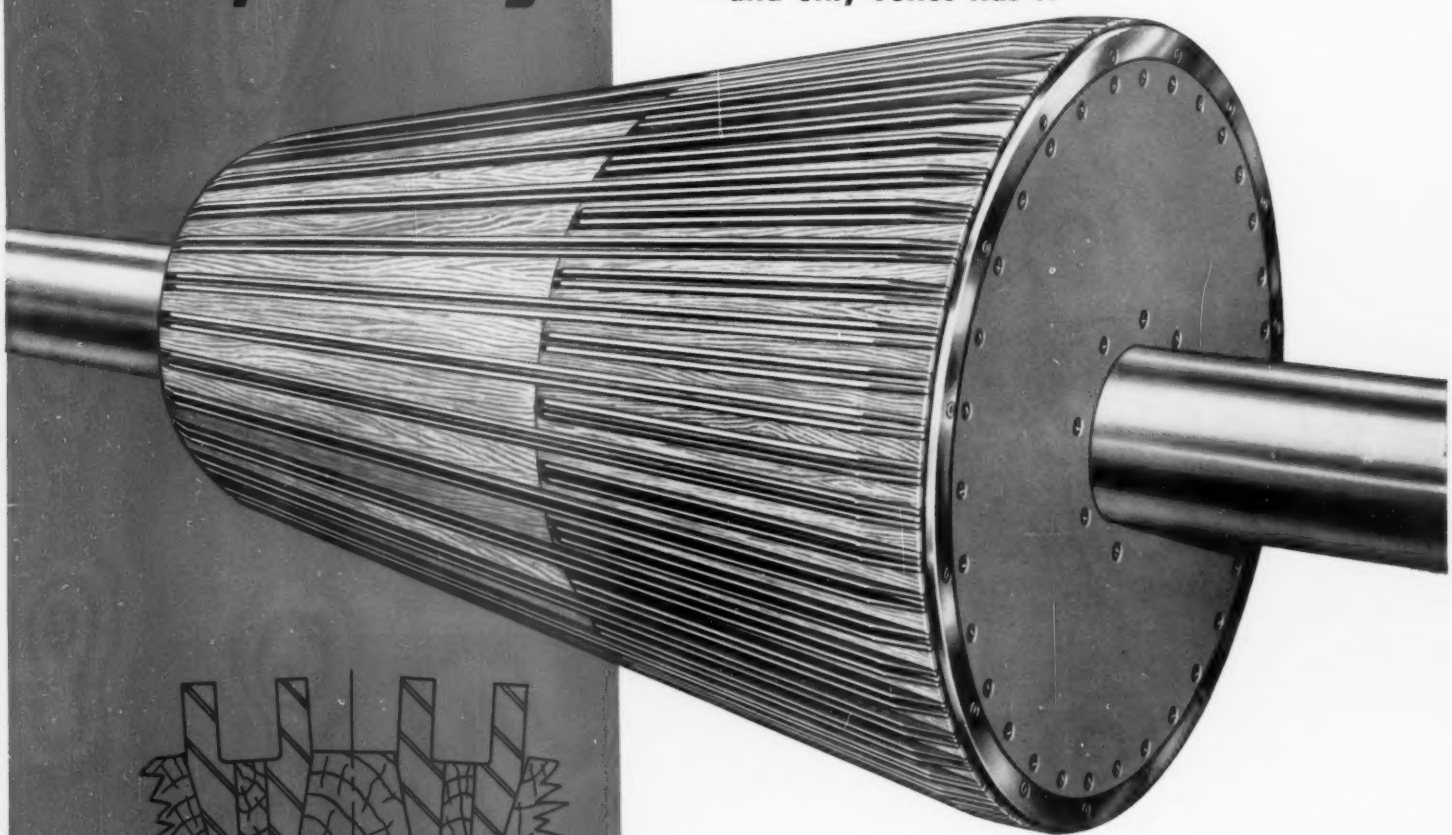
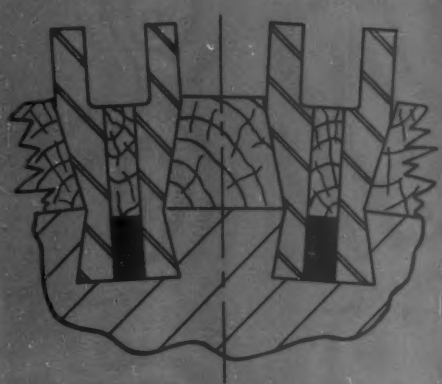
E.D. Jones

Adapta-Plug

A revolutionary advance in JORDAN PLUG *design*

— and only Jones has it





Inverted-wedge type slotting is the same for all bars; each slot carries a pair of bars, which may be furnished with any desired edge — from hydrating to extreme cutting — and readily changed to meet any mill condition which may arise.

The strongest and most adaptable plug design ever developed, the Adapta-Plug is easily stripped, easily filled (mills report saving up to 12 man-hours on this job alone); yet bars are held firmly in place, eliminating hazards of slot wear and corrosion.

Adapta-Plug is also available in Meehanite sleeve form; removable, if desired, for easy changeover. And since slots and woods remain the same, regardless of bar pattern, you can change bar thickness simply and easily without changing plug. Ask your Jones representative about Adapta-Plug's many advantages — or write us direct.

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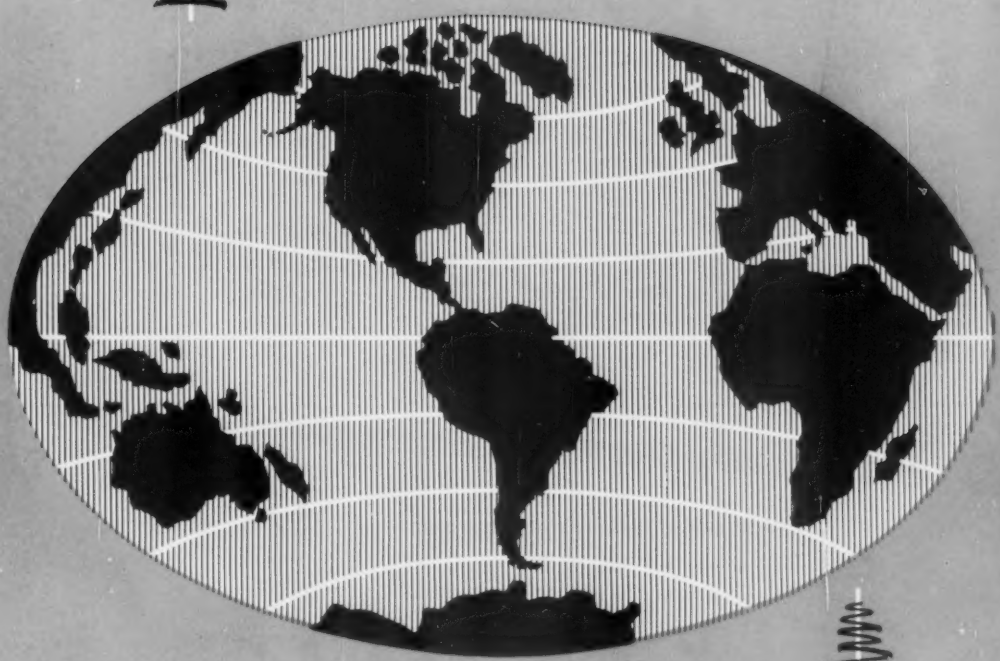
WOOD PULP
PAPER



Offices and representatives in 60 cities in the United States, Europe, Latin America, Africa, and Asia

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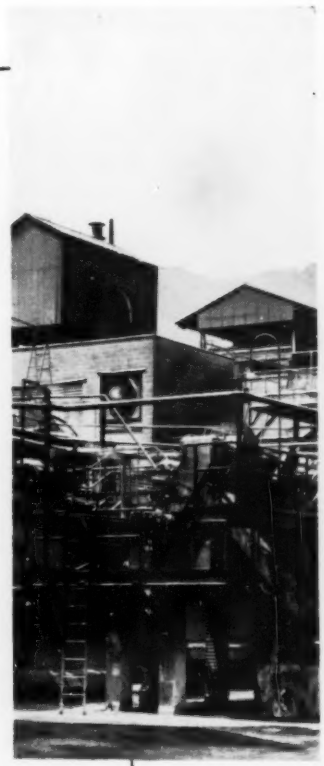
Now... Better Causticity Control for Alkaline Pulp Mills with...

TWO-STAGE LIME SLAKING



Now standard in Dorr Continuous Recausticizing Systems, two-stage lime slaking has simplified and improved the entire causticizing operation. A recent survey of seven Southeastern pulp mills established these definite advantages...

Additional slaking time provides better lime utilization, improved causticity control and increased capacity to absorb kiln surges.

Hot lime handling is reduced to a minimum . . . reburned lime bin can be eliminated or, when used, bucket elevator can be put on stand-by service only through by-pass arrangement.

Green liquor heating is eliminated as heat of reburned lime direct from kiln plus heat of reaction keeps slaking temperature above 200°F.

Gravimetric Type feeder on new lime provides close control over excess lime in System.

Two-stage lime slaking can readily be incorporated into existing Dorr Recausticizing Systems. Several different arrangements are possible and local conditions will dictate the most advantageous. A Dorr-Oliver engineer will be glad to discuss your chemical recovery flowsheet and advise how you can benefit from two-stage lime slaking. No obligation, of course. Dorr-Oliver Incorporated, Stamford, Connecticut.

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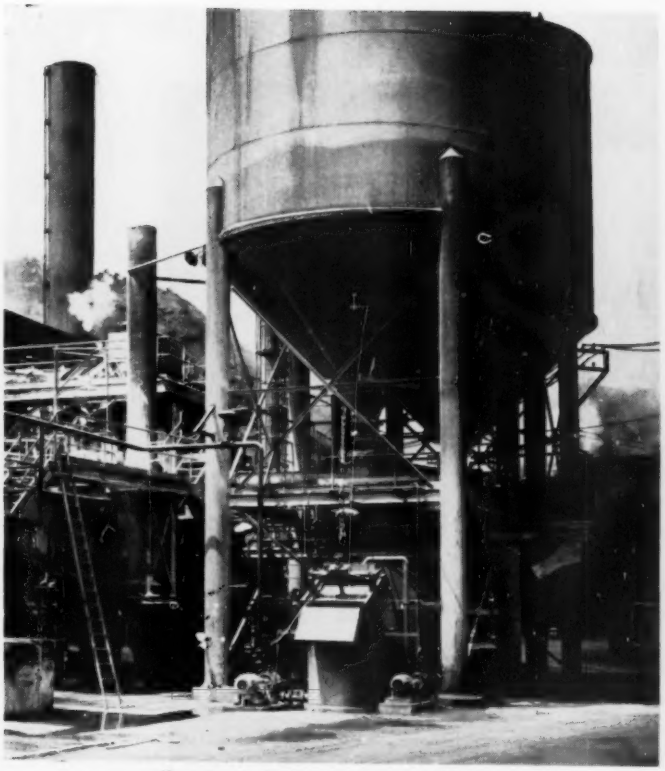
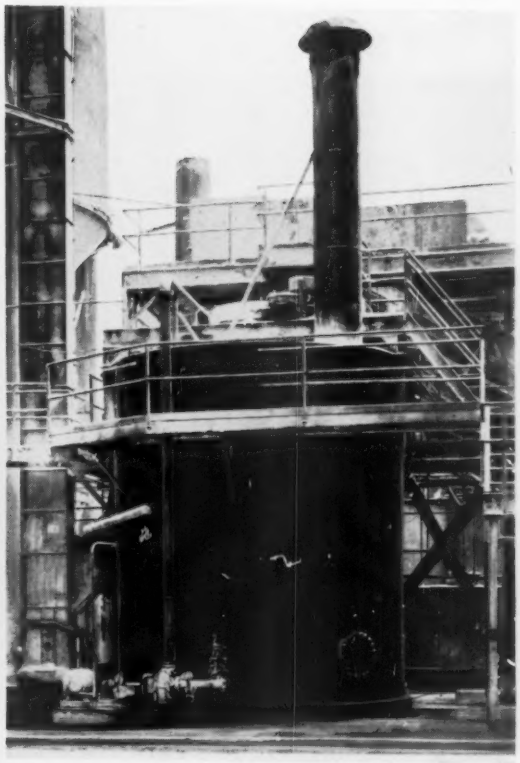
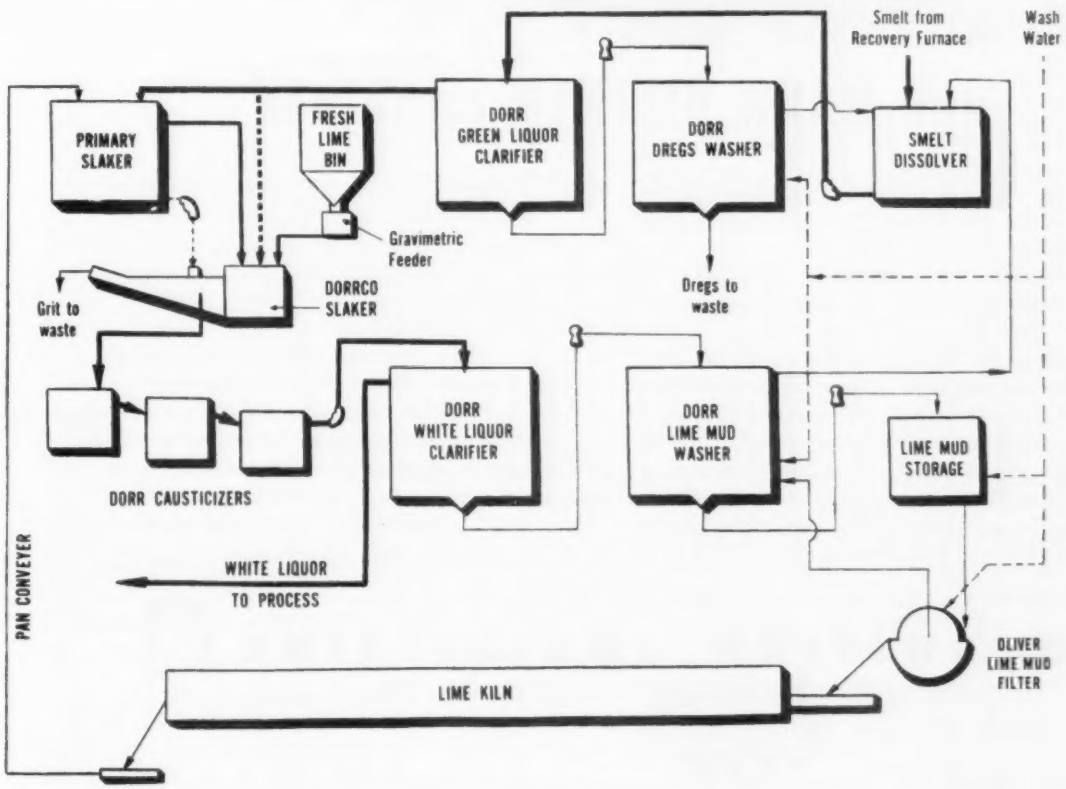
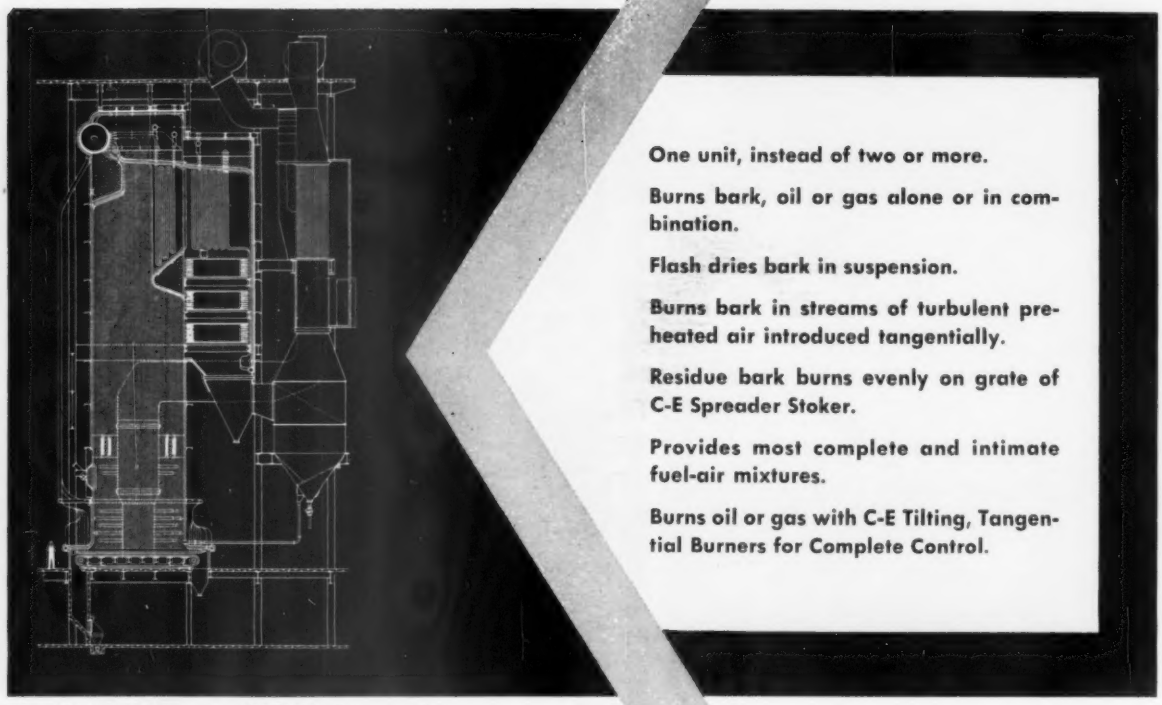


Two-stage slaking station at a Southeastern pulp mill. Dorrco Slaker is at left. Primary lime bin is used only on by-pass from kiln.



Closeup of Primary Slaker with pump for purging to Dorrco Slaker at lower left.





One unit, instead of two or more.

Burns bark, oil or gas alone or in combination.

Flash dries bark in suspension.

Burns bark in streams of turbulent preheated air introduced tangentially.

Residue bark burns evenly on grate of C-E Spreader Stoker.

Provides most complete and intimate fuel-air mixtures.

Burns oil or gas with C-E Tilting, Tangential Burners for Complete Control.

This unit is designed to produce 450,000 lb of steam per hr at 1335 psig and 958F.

It's a POWER BOILER and BARK BURNER combined

Many mills use one or more separate power boilers to supplement the steam supply from their bark burning units.

The unit illustrated here is a combination of these two boiler types. It combines, in a single unit, sufficient capacity to meet the steam needs of the average mill, thus saving both space and money. It reduces steam and water piping requirements, decreases operation and maintenance costs, avoids duplication of controls and reflects an initial cost considerably less than that incurred for two separate boiler types having a comparable combined capacity.

In this new design the combination of the long established C-E Tilting, Tangential Burners with the service-proved C-E Spreader Stoker permits a freedom of choice in operation never before available. Now you can burn oil, gas and bark in the same furnace . . . efficiently, dependably and economically . . . alone or in combination. You take full advantage of your bark supply and use purchased fuel only to meet exceptional steam demands or when your bark supply is inadequate.

For further information, contact the C-E office nearest you. Or—if you prefer write or phone the C-E Paper Mill Division in New York. You can't go wrong—if you see C-E.

COMBUSTION ENGINEERING

Combustion Engineering Building • 200 Madison Avenue, New York 16, N. Y.

B-902

Canada: Combustion Engineering-Superheater Ltd.

STEAM GENERATING UNITS; NUCLEAR REACTORS; PAPER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING SYSTEMS; PRESSURE VESSELS; DOMESTIC WATER HEATERS; SOIL PIPE

New Nopco FLAKE Defoamer

controls foam even on heavily colored grades

Nopco KFC, new flake defoamer, gives unequalled foam control—even on colored paper where foaming is especially troublesome...makes it far easier to turn out uniformly colored stock. Nopco KFC emulsion is exceptionally stable and will hold its stability for days, even without agitation...so helps give sure results and cut down waste at the same time.

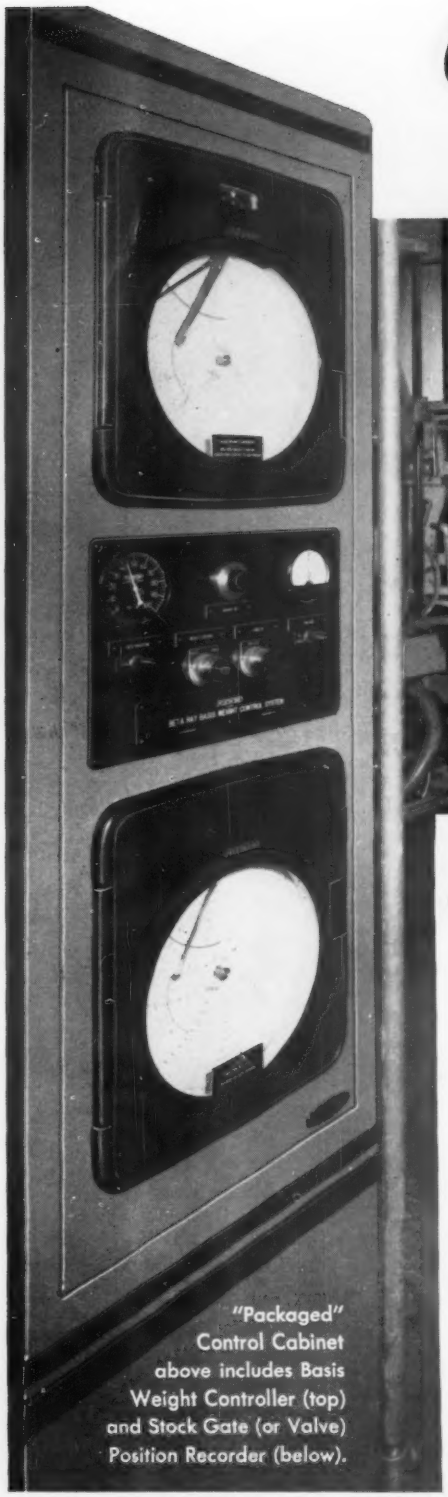
Nopco KFC is solid for easy transportation and storage, flaked for easy dissolving. It is packed in 10-lb. packages, particularly time saving and economical when you want only small quantities of defoamer. It can be dissolved and applied at fan pumps, headbox or wherever foam control is necessary. Extremely easy to use.

This is still another defoamer added to the complete Nopco line of paste and liquid defoamers—comprising the widest range of defoamers available to the paper mill industry. All our experience with defoamers and other paper-making chemicals is at your service. Why not consult your Nopco man on your production problems today! Nopco Chemical Co., Harrison, N. J.

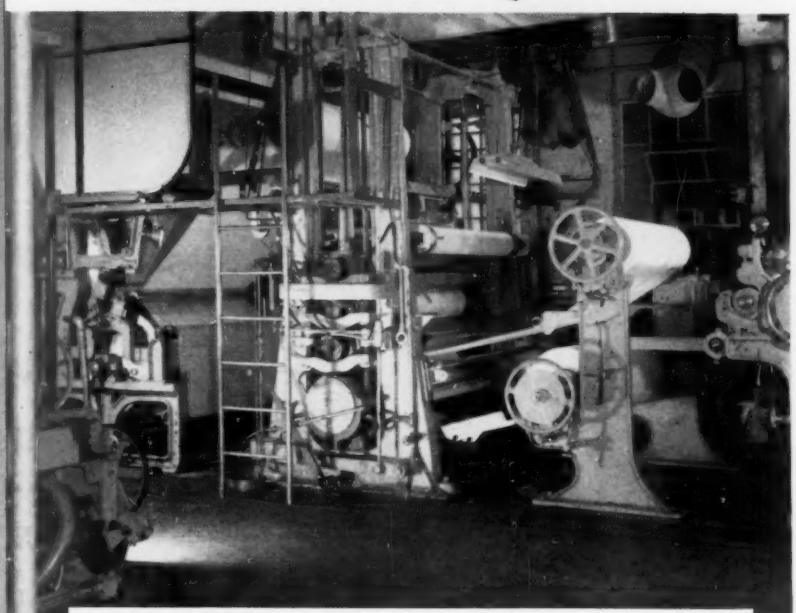
NOPCO

PLANTS: Harrison, N. J.
Cedartown, Ga. • Richmond, Calif.
London, Canada

Cut Weight Variation as much as 40%



"Packaged" Control Cabinet above includes Basis Weight Controller (top) and Stock Gate (or Valve) Position Recorder (below).



...with continuous, stepless automatic Foxboro Control of Basis Weight

Here's outstanding assurance of uniformity that's possible only when basis weight is put under continuous, automatic Foxboro control. Users report up to 40% reductions in basis weight variations!

Only this system takes its continuous machine-direction measurement across a *wide* averaging strip (14"). The special measuring circuit is self-compensating for deterioration of the radioactive material, and for changes in atmospheric pressure and temperature. Moreover, the operator merely turns a knob to preset the desired weight value.

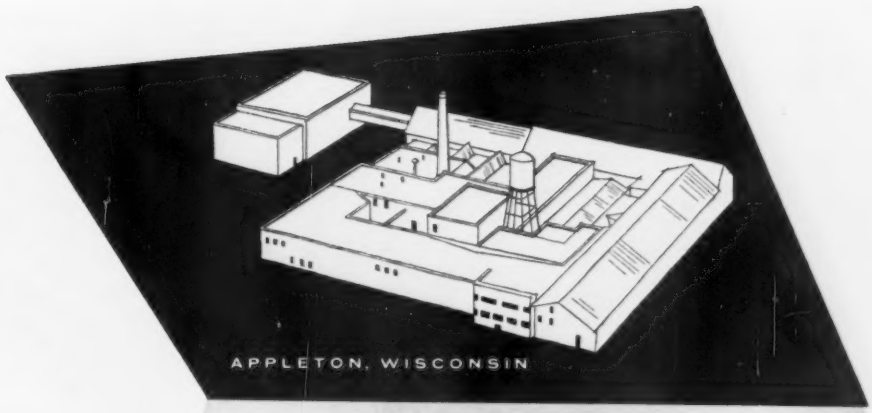
Send today for new literature: Bulletin PD-108 describes this unique Basis Weight Control System; Bulletin PD-105-2 describes the measurement of entirely independent *across-the-sheet* weight variations with the Sheet Weight Profiler.

THE FOXBORO COMPANY, 998 NEPONSET AVENUE, FOXBORO, MASSACHUSETTS, U. S. A.

FOXBORO
REG. U. S. PAT. OFF.

Beta-Ray Basis Weight Control

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND



Confidence....in the paper industry

Foresight.....to anticipate changing conditions and requirements of the paper industry with new manufacturing facilities

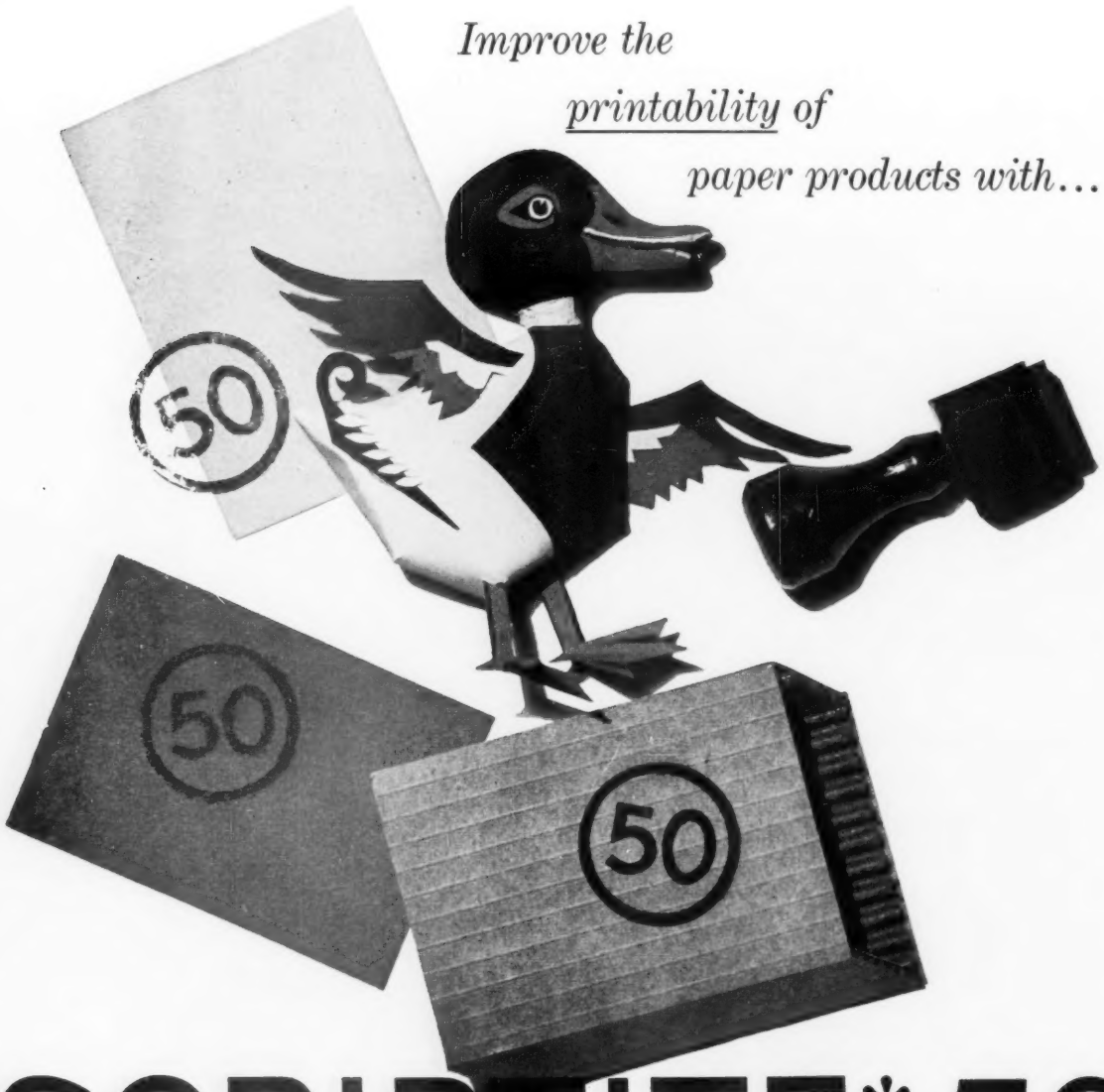
Appleton Wires are Good Wires

Appleton Wire Works, Inc.
GENERAL OFFICES, APPLETON, WISCONSIN

Improve the

printability of

paper products with...



SCRIPTITE* 50

To upgrade paperboard and a wide variety of paper, Monsanto now supplies Scriptite 50—a water soluble, long chain polyelectrolyte resin.

Scriptite 50 greatly simplifies the production operation because it has outstanding ability to bind to cellulose—*but does not stick to metal.*

When applied to board at the size press or calender stack, Scriptite 50 upgrades surface characteristics. Printability is improved remarkably. The ink maintains hardness and clarity because it's not absorbed.

When applied to paper at the tub or size press, Scriptite 50 modifies the paper surface to give you unequalled printing results.

For laboratory sample of Scriptite 50 and data sheets, write to Monsanto Chemical Company, Plastics Division, Room 922, Springfield 2, Mass.

The Monsanto Line of Paper Resins also includes

SCRIPTITE 54 ... *for outstanding water resistance and both wet and dry rub resistance*
SCRIPTITE 52 ... *in combination with formaldehyde to give water resistance to folding boxboard and to jute liner*
SCRIPTITE 40 ... *a urea wet-strength resin*
SCRIPTITE 33 ... *a melamine wet-strength resin*

MONSANTO

*SCRIPTITE: REG. U. S. PAT. OFF.

To do the Whole Job—Better

You must have exactly the right combination of Jordan Shell and Plug fillings

BOLTON Hydro Truss Shell Fillings and BOLTON Wedgeless Plug Fillings are that right combination. They are working allies that achieve for you the ultimate in quantity and quality of stock treatment. Made by experts in the manufacture of Jordan fillings, from selected materials and by exacting standards of production, BOLTON Fillings bear the stamp of craftsmanship acquired from fifty years of specialized experience.

BOLTON Hydro Truss Shell Fillings

Knives and spacers are steel-trussed together under hydraulic pressure, then pattern-formed under pressure to fit your Jordan shell, no matter what the make or size. With uncompromising construction, strength and wearability BOLTON Hydro Truss Shell Fillings are equal to all refining requirements.

Knives of any type metal, or thickness, and spacers of any material or size can be furnished according to your particular requirements.

BOLTON Wedgeless Plug Fillings

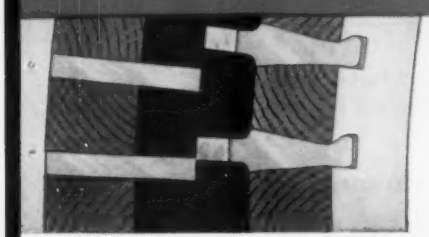
Knives held their entire lengths in dove-tailed slots in the plug and spacers shaped like a keystone, lock BOLTON Wedgeless Plug Fillings together in a solid unit of operating strength. Knives with any size cutting edge, single or duplex, can be interchanged in the same slots with no change at all to the plug body.

For treatment of any stock, for installation in BOLTON Wedgeless Plugs, that are made for any make of Jordan, BOLTON Wedgeless Plug Fillings make the perfect working partner to BOLTON Hydro Truss Shell Fillings. From this combination you can always depend that the **whole** job of balanced refining and uniform stock treatment will be done **better.**

BOLTON Fillings can be changed quickly, easily, too, with a minimum of down time. As a guide to papermakers step by step, illustrated instruction sheets have been prepared, which are available on request.

BOLTON EMERSON

TRADE MARK



John W. BOLTON & Sons, Inc.
THE EMERSON MANUFACTURING COMPANY, DIVISION
Lawrence, Massachusetts, U. S. A.

Canadian Representatives: PULP AND PAPER MILL ACCESSORIES, LTD., Montreal, P. Q.
Foreign Representatives: UNITED STATES MACHINERY CO., INC., 90 Broad Street, New York 4, N. Y.

Is paper quality important to you, too?

The one certain way of getting absolutely uniform quality starches for your better papers is by using Hercules starches. One batch of any specific type of Hercules starch is precisely identical with every other batch of the same type. The reason for the perfect quality control is that production of Hercules brand corn starch is under 100% automatic instrument control in an exclusive, new process. Results are precise and your starch requirements are met exactly.

Precision instrument quality control means less spot checks for you to control your product uniformity. But even more important, you will receive far fewer rejects from your customers. Hercules starches are equally applicable as beater additives, in "off the machine" coating or calender sizing.

Ask the man from Corn Products, he can help with product information and engineering assistance. Whatever your paper-making problem, he will be able to supply you with the technical assistance you require.

Hercules

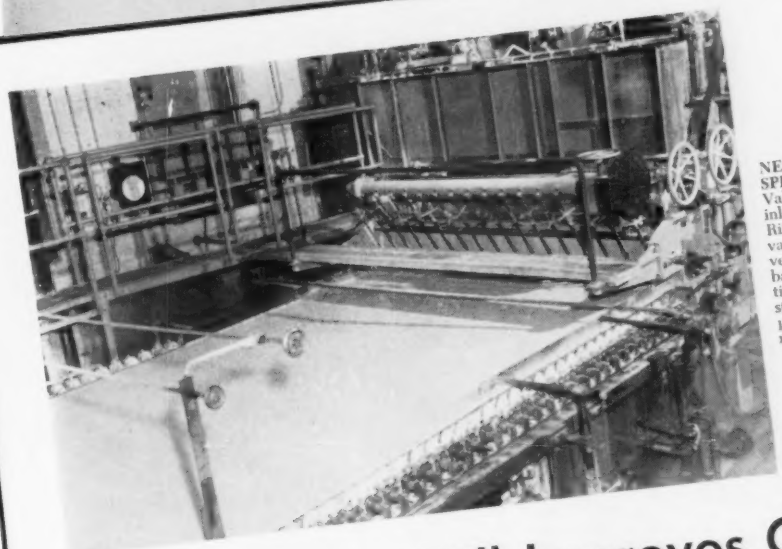
BRAND

CORN STARCH

1906 • **50th ANNIVERSARY** • 1956
CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.

Corn Products makes these famous brands of starches and gums for the paper industry:
HERCULES · GLOBE · EAGLE · FOXHEAD · AMIJEL · CORAGUM · TEN-O-FILM · CLARO STARCHES
EXCELLO AND GLOBE DEXTRINES · LAM-O-DEX GUMS

As reported in the March issue
of "PULP AND PAPER"



NEW HEADBOX AND SLICE SPELL MORE ACCURACY—Valley Iron Works headbox and inlet on No. 4 machine at Fox River Paper Corp. Due to large variety of weights and grades, very accurate slice, lips and baffle adjustments prove effective in controlling physical strength, formation and curl properties of great range of furnish.

A Fine Paper Mill Improves Quality

What Fox River Paper Corp. did to increase production; many benefits resulted from changes made at Appleton mill

BY H. P. (PHIL) DIXSON
• Vice Pres. in charge of Mfg., Fox River Paper Corp.
(Written especially for Pulp & Paper)

• Fox River Paper Corp., has taken new steps to improve quality and in-crease pr[illegible]

No. 4 and No. 5 machines are extra Bird Machine 3-A screens, one for each. These allow us to reduce the screen slot size, [illegible] know what are [illegible]

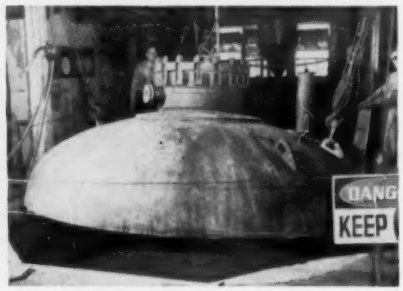
VALLEY is proud to have played a part in this success story

again it's INLET and HEADBOX by . . . **VALLEY**

for detailed information regarding more and better paper . . . write
VALLEY IRON WORKS CO • APPLETON, WISCONSIN

High up. Welders install top course of a new "Inconel protected" digester at a southern kraft mill. The men are working on the "steel side." Interior surface gets Inconel protection through *Hortonclad*® process of *Chicago Bridge & Iron Co.*

Welding progresses smoothly on the "Inconel side" of the *Hortonclad* steel plate. Although the Inconel layer amounts to only 10% of the thickness of the 1.14" plate, it provides all the corrosion resistance of solid Inconel — at a worthwhile saving in cost.



Now dome goes on. Two types of Inco welding electrodes, made specifically for welding Inconel and Inconel-Clad Steels, were used. The welds, incidentally, are all stress relieved in the field.

Put brakes on accelerated corrosion in sulfate digesters...*with Inconel*

Are alkaline pulping liquors causing corrosion problems in *your* digesters?

Then follow the lead of large southern kraft mills. *Use Inconel® linings.*

Inconel offers excellent resistance to corrosion by sulfate liquors. It's not affected by stress corrosion cracking. And has a thermal expansion coefficient close to that of carbon steel.

Get "Inconel protection" — now!

How to get "Inconel protection"

Efficient fabrication techniques have been developed by Chicago Bridge & Iron Co., Chicago 4, Ill. . . . A. O. Smith Corp., Milwaukee 1, Wis. . . . Lukens Steel Corp., Coatsville, Pa.

For expert help in planning a new alkaline digester, write to any of these companies.

And for further information on materials testing, selection or fabrication, consult Inco's Corrosion Engineering Section.

Valuable booklet — FREE!

"Practical Solutions for Metal Problems" is a handy, 34-page booklet. Full of information. Has many photos of actual installations. Shows you exactly how other pulp and paper mills have solved their problems. You may find in it the solution to *yours*. Write for a copy — *today*.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

INCO TRADE MARK **NICKEL ALLOYS**

The "Electronic Look" that enlarges 21,000 times!

When you step up the size of a pigment sample 21,000 times, you get an accurate picture of its physical properties. That's why Glidden research technicians use a powerful electronic microscope for these examinations.

This is just one of the many control tests made frequently throughout the production process to insure constant pigment uniformity. It's this Controlled Quality that makes Glidden pigments the finest available anywhere—and, which assures your complete satisfaction with Glidden Rutile and Anatase Titanium, CADMOLITH Reds and Yellows, SUNOLITH Lithopones.

Write now for detailed information on these and other products of Glidden Planned Research.

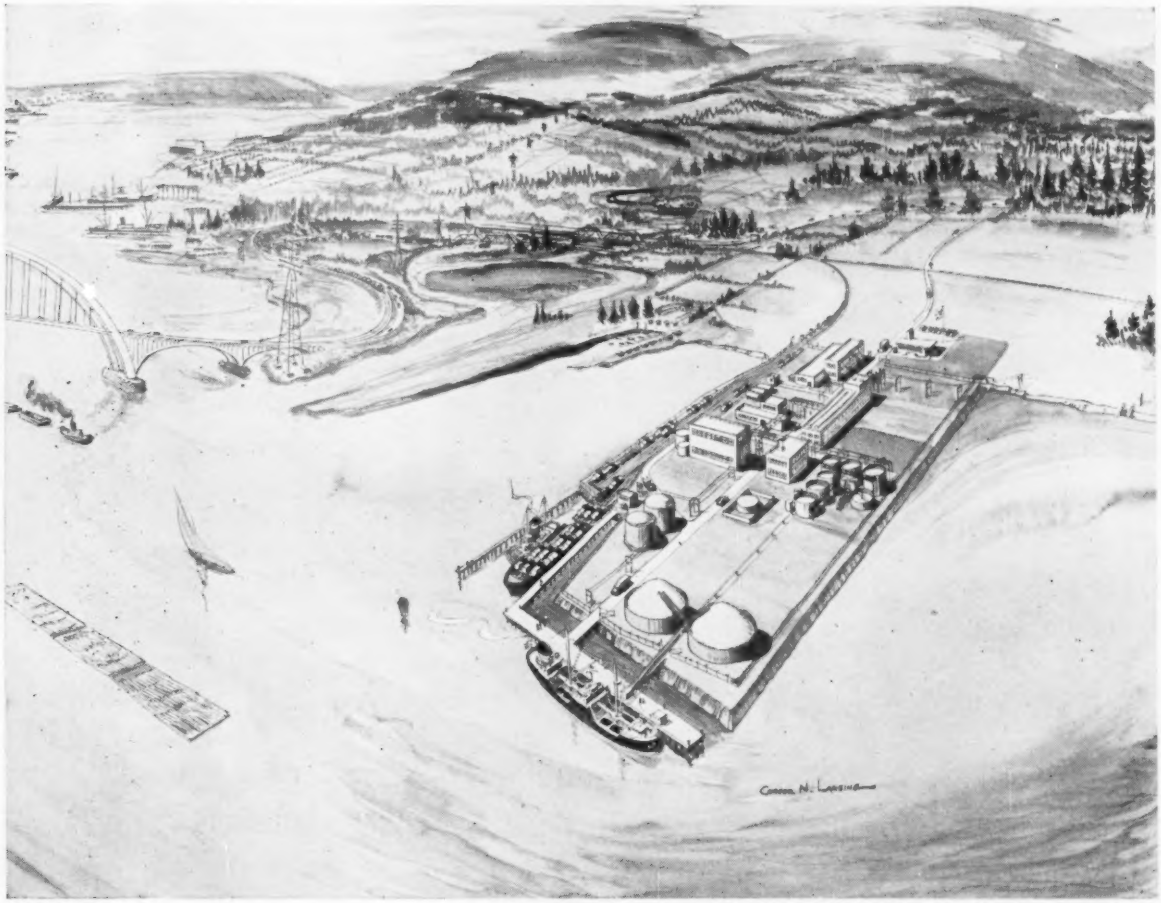
THE GLIDDEN COMPANY

Chemicals – Pigments – Metals Division

Baltimore, Maryland • Collinsville, Illinois • Hammond, Indiana • Scranton, Pa.

CHEMICALS PIGMENTS METALS

QUALITY Glidden PRODUCTS



You'll get time-saving delivery by deep-water chemical barge, as well as swift rail service, from the new Hooker plant. To insure deep-sea dockage, a million yards of gravel and soil were scooped from sea bottom and funneled onto plant site.

Will you get the advantages of this new Hooker chlor-alkali plant in 1957?

One year and $11,000,000 from now the chlorine-caustic soda plant sketched here will be a reality.

It will be Western Canada's first domestic source of chlorine and caustic soda.

Here is what this new Hooker plant will mean to you if your company has a mill or plans one in Western Canada:

You will get faster, cheaper delivery of caustic and chlorine over a shorter, more dependable supply line.

There will be a small but real freight saving.

You will be able to draw more timely, more flexible technical assistance from men who know your industry well.

The new plant, located at North Vancouver, will be part of a distinctly Canadian company, Hooker Chemicals, Ltd.

It is being built by Canadians to serve Canadian industry.

It will use the manufacturing processes and experience of Hooker Electrochemical Company, well known to the pulp and paper industry for fifty years.

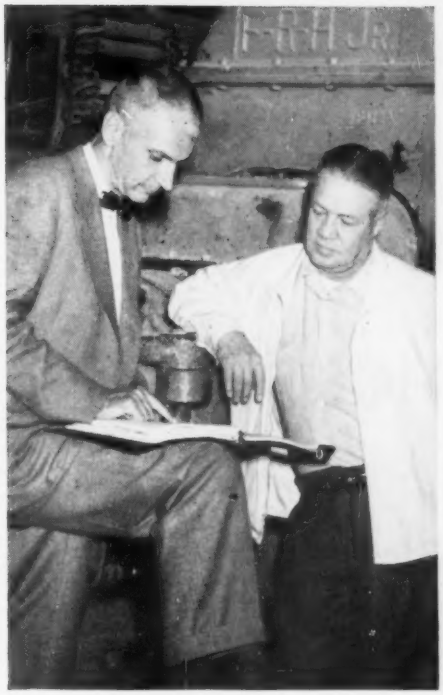
If you would like to discuss the new plant and your own needs, or if you would like technical data and assistance on Hooker chlorine and caustic soda, write to Hooker Chemicals, Ltd., 717 Pender St. West, Vancouver 2, B. C.

NOTE: During the construction period at Vancouver, the Hooker plant at Tacoma will continue barge and tank car delivery of chlorine and caustic soda to this area. Another dependable supply of caustic is provided by our storage depot at Vancouver.

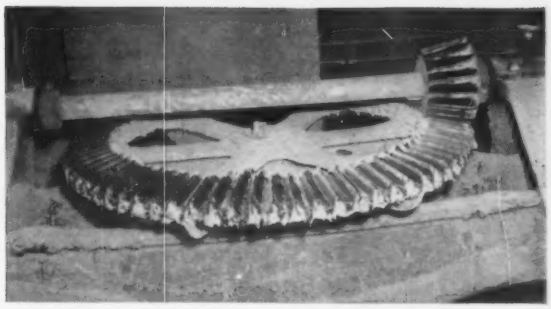
—HOOKER ELECTROCHEMICAL COMPANY—
1908 FORTY-SEVENTH STREET, NIAGARA FALLS, N. Y.
NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES

HOOKER CHEMICALS & PLASTICS

6-589



A. D. Schnurr (right), Kalo Brick & Tile Company president and Standard Oil lubrication specialist Roland C. Bleimehl discuss plant lubrication requirements. Providing technical service on lubrication is something for which "Rollie" Bleimehl is well qualified. Rollie is a mechanical engineer with a degree from Iowa State College and a graduate of the Standard Oil Sales Engineering School. He's been an industrial lubrication specialist for 10 years with the Standard Oil Company. Customers find his experience and training pay off for them.



Large open gear, such as this one in Kalo Brick & Tile plant, suffered excessive gear tooth wear until their Standard Oil man suggested switch to CALUMET Viscous. New lubricant eliminated throw off, reduced gear replacement and maintenance.

CALUMET Viscous Lubricant solves gear lubrication problem for Kalo Brick & Tile Company

Long-time Standard customer receives another demonstration of effectiveness of Standard Oil Products and technical service.

The Kalo Brick & Tile Company, Fort Dodge, Iowa was experiencing trouble with the lubrication of open gears. The lubricant used lacked adhesive qualities and was being thrown off resulting in excessive gear tooth wear. In addition, the lubricant had to be heated before application.

As they had done in so many cases during sixty-five years as a Standard Oil customer, Kalo management called in a Standard industrial lubrication specialist. Inspection and recommendation by the Standard man resulted in a switch to CALUMET Viscous Lubricant for open gears. Kalo Brick & Tile Company got these results: gears received an effective shield that did not throw off, life of gears was lengthened and lubrication maintenance and attention greatly reduced, no preheating of CALUMET Viscous Lubricant was required so this messy job and the preheating equipment were eliminated.

No matter what the problem, chances are Standard Oil lubricants and technical service can help you solve it. Try them. Call your nearby Standard Oil lubrication specialist in any of the 15 Midwest and Rocky Mountain states. Or write Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.

Kalo Brick & Tile Company plant, Fort Dodge, Iowa found solution to gear lubrication problem by using CALUMET Viscous Lubricant.

Quick facts about
CALUMET Viscous Lubricant

- **Not a residual product but a true grease carefully manufactured from selected soaps, oils and additives.**
- **Good wetting ability. Gives lubricant superior adhesiveness, makes it resistant to washing.**
- **Has very high load-carrying capacity. CALUMET Viscous grease formula is especially designed to provide effective shield under heavy load.**
- **Resistance to heat. Since it is a true grease compound, CALUMET Viscous has extreme stability, does not thin out under high heat.**

STANDARD

STANDARD OIL COMPANY
(Indiana)

...for superior paper

Use OK BRAND Starches

at no extra cost

the complete paper mill line

	Wet-End Additives	Press & Tub Sizes	Coating Adhesives	Calender Sizes
KEOJEL	●			
KEOZYME		●	●	●
KEOFILM				●
KEOCHLOR		●	●	●
KEOCOTE			●	
PEARL	●			
KEOGUM	●			

There's an OK Brand product especially formulated for every paper mill operation requiring starches and adhesives ...and there's no extra cost for these top-quality OK BRAND products.

There's no extra cost for Hubinger Technical Service either. If your mill needs a special starch product, phone or write for a Hubinger paper-starch technical service representative. He will be glad to help you solve your starch problems. You'll find him OK too.

Manufacturing better products from corn for 75 years

THE HUBINGER COMPANY 1881 1956

Keokuk, Iowa

Adjustable Speed
Is Your Drive Problem in this List?

AIRCRAFT INDUSTRY
- ☐ Wind Tunnels
- ☐ Dynamometers
- ☐ Accessory Testing

AUTOMOTIVE INDUSTRY
- ☐ Conveyors
- ☐ Machine Tools
- ☐ Presses
- ☐ Dynamometers

CALCINED PRODUCTS
- ☐ Kilns
- ☐ Fans
- ☐ Feeders
- ☐ Conveyors

CHEMICALS
- ☐ Pumps
- ☐ Conveyors
- ☐ Process Machinery
- ☐ Winders

FOOD PROCESSING
- ☐ Mixers
- ☐ Dryers
- ☐ Conveyors
- ☐ Mills

GRAPHIC ARTS
- ☐ Main Presses
- ☐ Press Auxiliaries
- ☐ Winders
- ☐ Slitters

MATERIALS HANDLING
- ☐ Conveyors
- ☐ Cranes
- ☐ Shovels
- ☐ Lift Trucks

MINING
- ☐ Conveyors
- ☐ Hoists
- ☐ Mills

METAL WORKING
- ☐ Rolling Mills
- ☐ Presses
- ☐ Winders
- ☐ Slitters
- ☐ Loop Cars

PULP AND PAPER
- ☐ Paper Machines
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- ☐ Extruders
- ☐ Plasticizers
- ☐ Calenders
- ☐ Winders

TESTING
- ☐ Engines
- ☐ Pumps
- ☐ Motors
- ☐ Auxiliaries
- ☐ Wind Tunnels

TEXTILES
- ☐ Winders
- ☐ Slashers
- ☐ Dryers
- ☐ Batchers

UTILITIES
- ☐ Fans
- ☐ Boiler Feed Pumps
- ☐ Feeders

DYNAMATIC®

Eddy-Current Equipment Can Be the Solution

Using standard AC lines as a power source, Dynamatic torque transmitting equipment satisfies most stepless adjustable speed requirements. Dynamatic Ajusto-Spede® and Dynaspede® Drives, Couplings, Brakes, and Dynamometers with electronic or magnetic amplifier control provide the advantages of rapid response, wide speed range, quiet operation, low power losses, low maintenance cost, and remote control.

Send for your free copy of the Dynamatic Bulletin GB-2, which illustrates and describes eddy-current adjustable speed rotating equipment.

EATON — DYNAMATIC DIVISION
MANUFACTURING COMPANY
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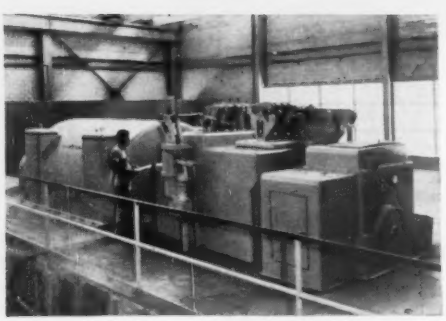
ENGINEERING REPORTS:



ABOUT HALF of the mill's electrical requirements are produced by two 10,000-kw, single automatic extraction, non-condensing steam turbine-generator units, one of which is shown above. Steam is re-used for paper processing to increase mill's efficiency.

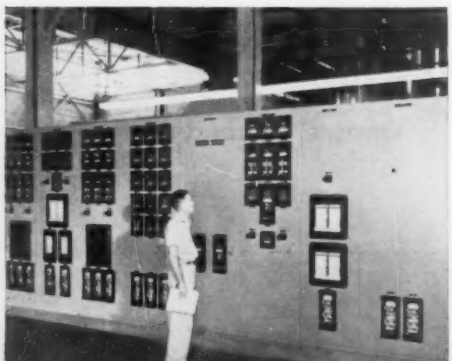
At Bowaters' new $60,000,000 mill,

General Electric engineered electrical system helps Bowaters Southern exceed mill design capacity

The Bowaters Southern Paper Corporation, Calhoun, Tenn., is one of the newest paper mills and the largest newsprint mill in the South. Recognized for outstanding—and in some areas revolutionary—paper manufacturing methods, Bowaters installed a G-E engineered electrical system designed to handle present huge power requirements and allow for future expansion.

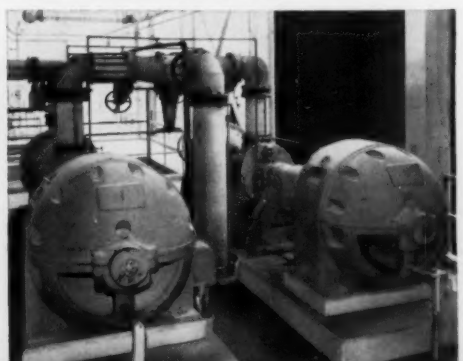
THE ELECTRICAL EQUIPMENT for generation, distribution and utilization was completely co-

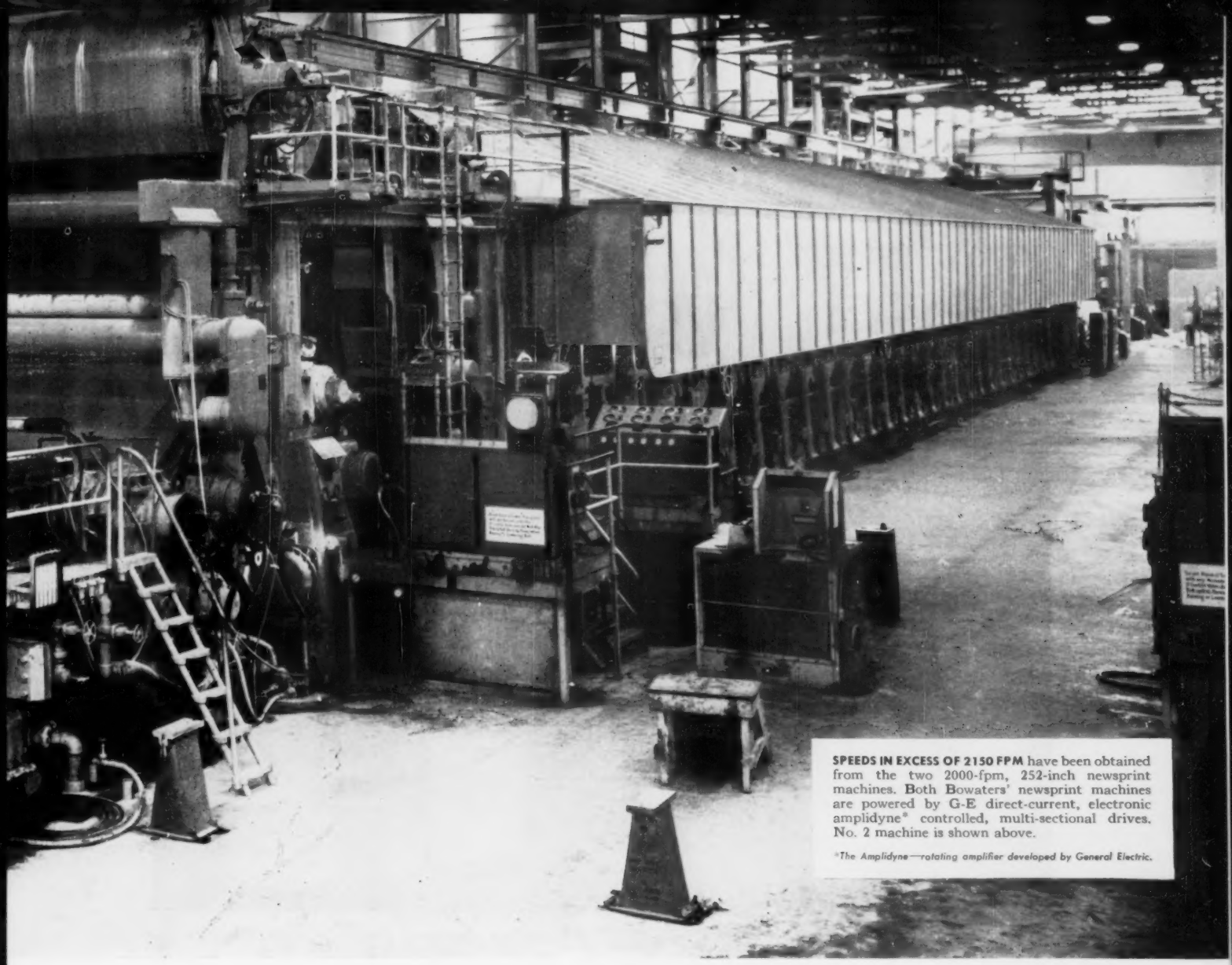
"BRAIN" of the distribution system, center for the mill's controls and metering, is located in this centrally placed and readily accessible duplex control board.



EIGHT G-E 4500-horsepower synchronous motors drive grinders, each devouring two cords of five-foot wood an hour. G-E switchgear is shown at far right.

TOTAL HORSEPOWER of all the mill motors is about 74,000. Below, two G-E 300-hp induction motors drive jordans during raw pulp make-up stages.





SPEEDS IN EXCESS OF 2150 FPM have been obtained from the two 2000-fpm, 252-inch newsprint machines. Both Bowaters' newsprint machines are powered by G-E direct-current, electronic amplidyne* controlled, multi-sectional drives. No. 2 machine is shown above.

*The Amplidyne—rotating amplifier developed by General Electric.

production hits 550 tons of newsprint, 150 tons pulp per day

ordinated and system engineered. It was designed for, and is operated with, the system neutral grounded at all voltage levels. The 13.8-kv main voltage level is very satisfactory for the present large load and adequately provides for future growth requirements. System flexibility was demonstrated by the fact that it was possible to exceed original design capacity and obtain greater production without endangering plant personnel or equipment.

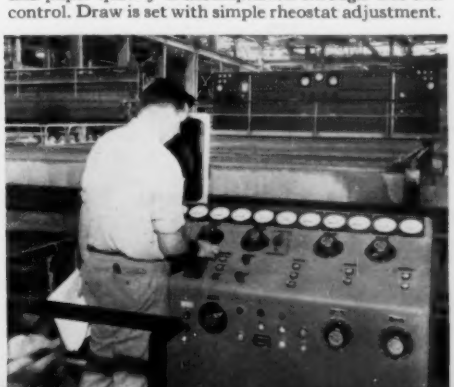
WHEN YOU EXPAND OR MODERNIZE, investigate the advantages of G-E electrical equipment and engineering services. G-E engineers will work with you to design and install an engineered system that meets your production requirements. These services will help by saving you valuable time and by helping to co-ordinate your project through start-up.

YOUR G-E APPARATUS SALES REPRESENTATIVE will tell you more about G-E equipment and G-E engineering services. Contact him early in your planning and write for bulletin GED-2244, "Engineering Services," to General Electric Co., Section 681-9, Schenectady 5, N. Y.

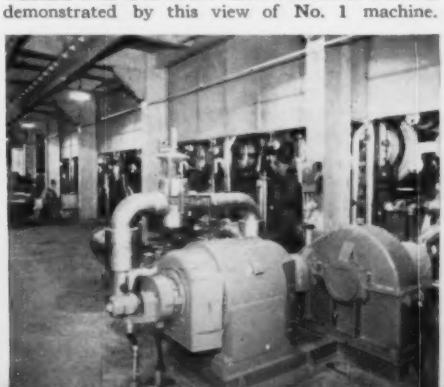
Engineered Electrical Systems for the Paper Industry

GENERAL ELECTRIC

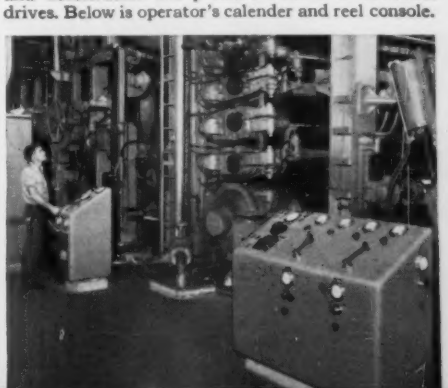
WIDE DRAW ADJUSTABILITY for maximum flexibility and paper quality is accomplished through wet-end control. Draw is set with simple rheostat adjustment.

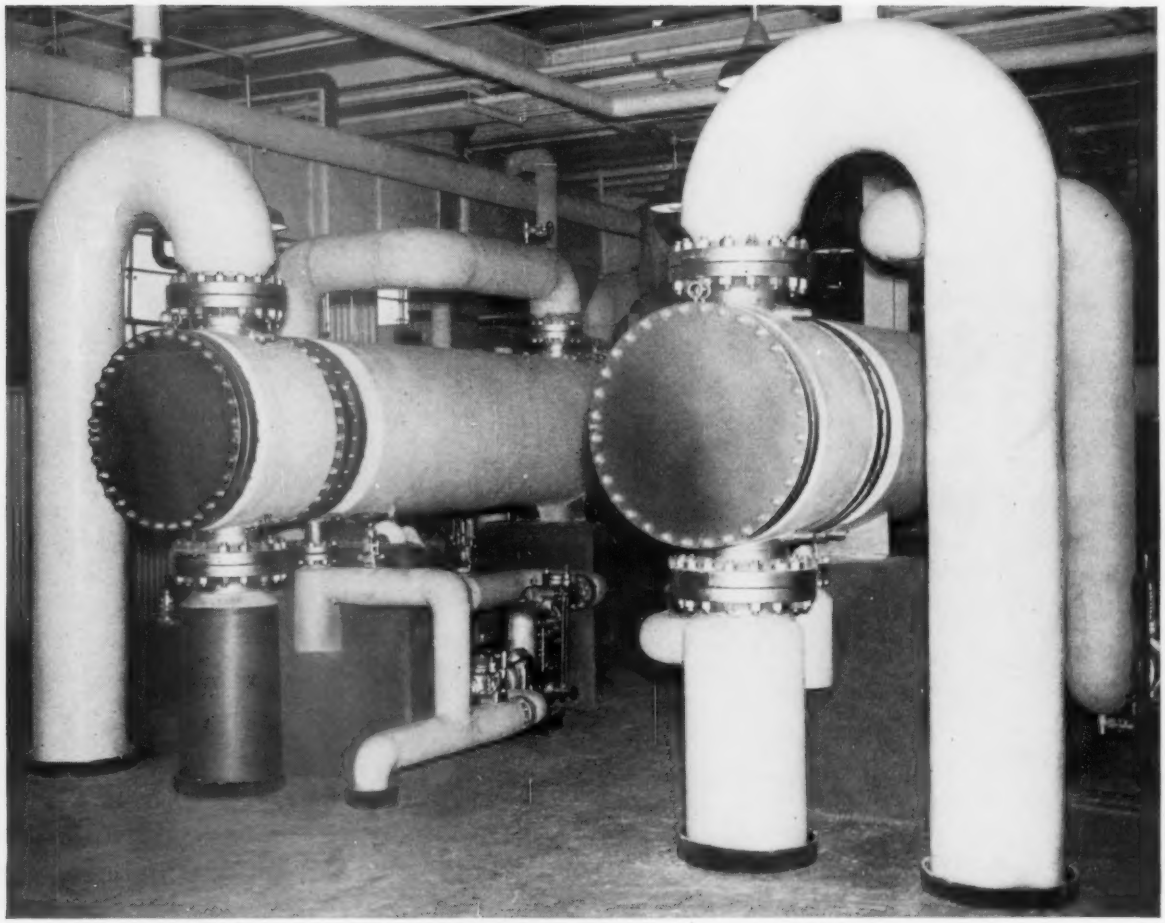


UNOBSTRUCTED ACCESS to the backside of the machine with G-E direct current sectional drives is demonstrated by this view of No. 1 machine.



INSTANT SLACK TAKE-UP and adjustable acceleration and deceleration are possible with G-E sectional drives. Below is operator's calender and reel console.





Unibestos provides low cost, effective insulation for pipes and exchangers used in the Great Northern chemi-groundwood plant.

Unibestos reduces application costs on bends and joints

Here is a stronger, longer lasting insulation that can be cut and mitered for quick, easy insulation of bends, expansion joints, tees, ells and other fittings. A minimum of cementing is required at the joints because UNIBESTOS' long, interlacing fibers form positive heat seals.

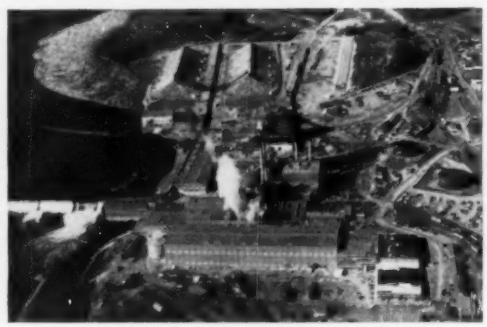
Unusually durable, Unibestos withstands vibration and impact... remains unaffected by acid and chemical fumes so often encountered in the paper industry... can be removed and reused as often as necessary.

Greater Efficiency with Unibestos®

Amosite, the well known South African asbestos with the long resilient fibers, gives Unibestos its superior insulating qualities. Heat loss at the joints is minimized due to interlacing of fibers.

Standard Production Sizes

Unibestos Pipe Insulation is regularly made in 3-foot lengths for pipe sizes from ½″ through 24″, in standard thicknesses through 5″. Unibestos Block Insulation is made in 6″, 12″, 18″ or 36″ widths and in thicknesses from 1″ through 3″ in ½″ increments.



In its multimillion dollar expansion program, the Great Northern Paper Company utilized Unibestos to provide efficient insulation for many processes.

For complete information, write for descriptive Bulletin 109C

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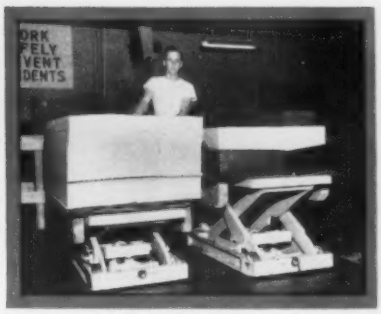
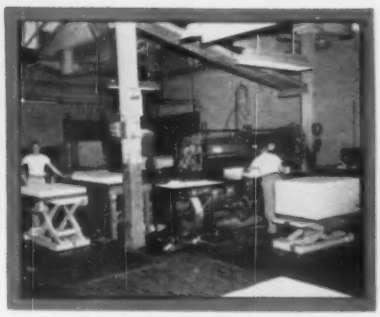
How A Paper Mill Can Cut Its Handling Costs

Placing Southworth Lift Table Under Load



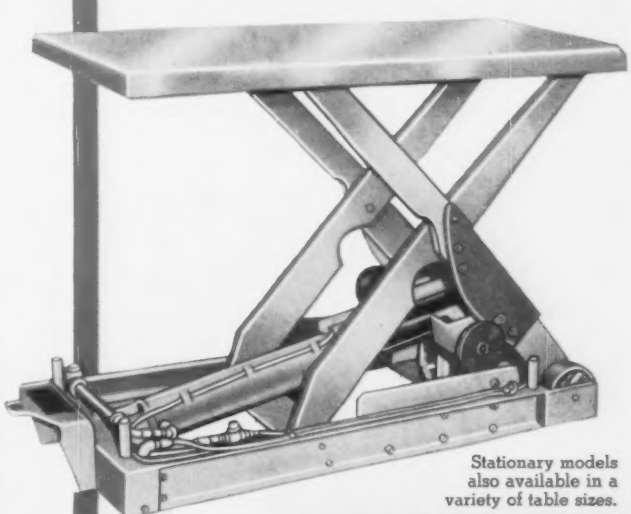
Adjustable Heights for Sorting or Piling



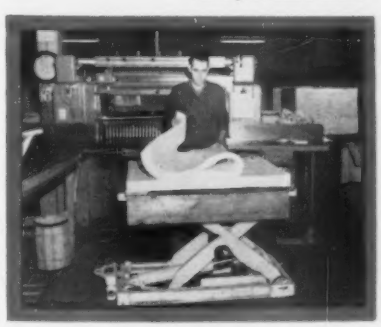
Typical Mill Trimming Installation

THE NEW PORTABLE SOUTHWORTH LIFT TABLE

Capacity	4000 lbs.
Platform Dimensions	24" x 52"
Collapsed Height	7¼"
Extended Height	37¼"
Controls	Foot or hand switches
Motor	½ h.p. single phase, 115 volt AC 60 cycle, 1725 rpm.
Hydraulics	Pump actuated ram with built-in relief and solenoid valves



Stationary models also available in a variety of table sizes.



Elevating Stock to Facilitate Cutting

As it has in paper mills, the Southworth Lift Table is eliminating the fatigue factor, reducing handling time and increasing production in printing plants, lithographers and binderies. Users are quick to see the four-way advantages of this versatile Lift Table. Not only may it be easily relocated for various tasks, but when placed under a skid or palletized load, it then elevates the stock to the correct feeding or working height for the machine or operation involved. In tandem, the Southworth Lift Table is the ideal positioner for such handwork as sorting or re-piling . . . with free access to work from all four sides as there is *no* superstructure to hamper the operator.

Keeping Stock at the Proper Working Height Saves Time, Saves Money

*Photos Courtesy of Tileston & Hollingsworth

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If you make papers where appearance counts—wallpaper, publication stock, wrappers, cartons—TITANOX white titanium dioxide pigments are for you.

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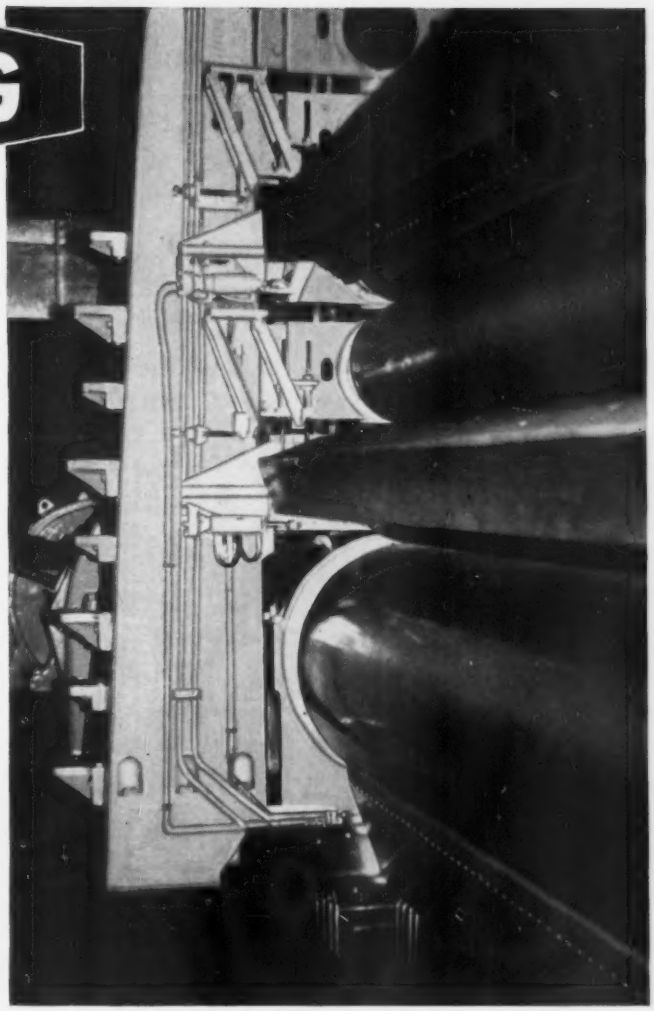
LODDING

Just what the doctor ordered....



Lodding special linkage design because of special frame on this calender . . . . doctors retractable for roll changes. Another example of the long-standing Lodding principle:

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★DEPENDABLE SUPPLY

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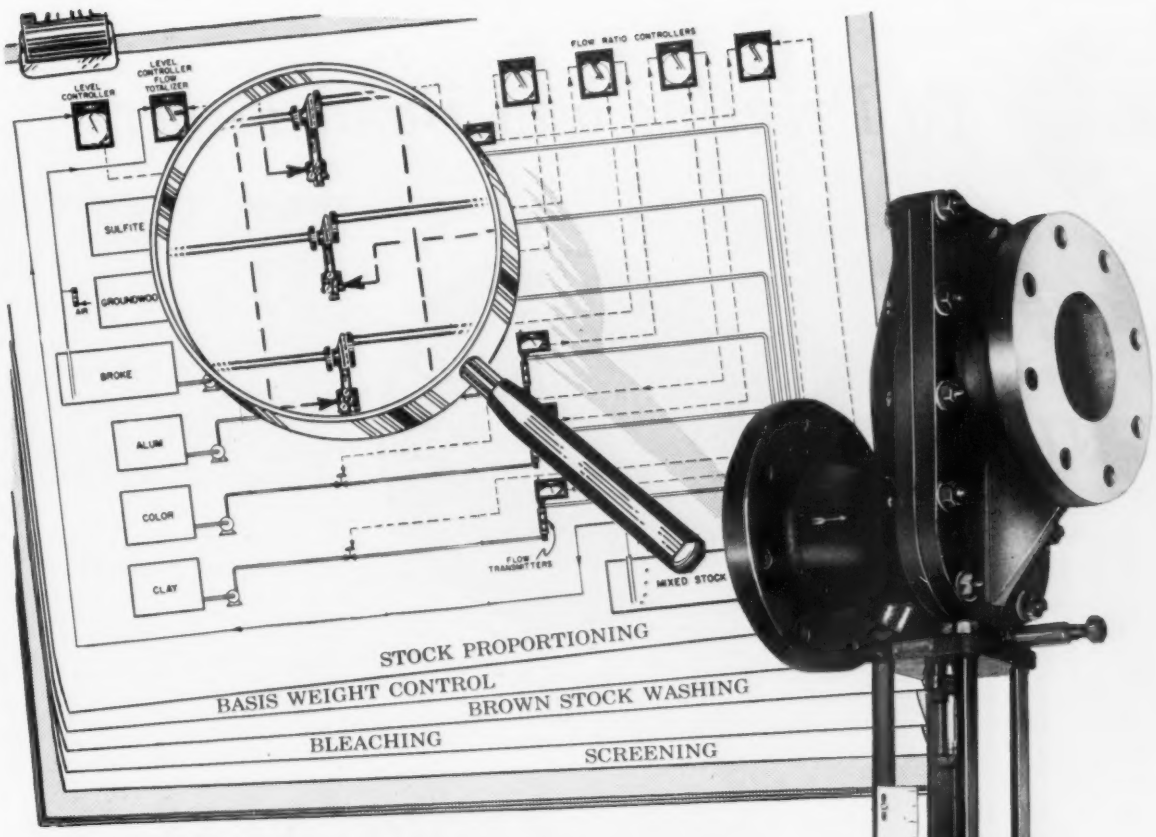

F & P Ratogate Non-Plugging Paper Stock Valve

"CONTROLLED TURBULENCE" AND DIAMOND-SHAPED PORT GIVE WIDE RANGE STOCK FLOW CONTROL WITHOUT PLUGGING

The Z-shaped body of the F&P Ratogate valve provides "controlled turbulence" to prevent paper stock from de-watering and plugging as flow rate increases or decreases. Even at low flow rates the agitation continues to provide an effective washing action inside the valve body.

The port becomes diamond-shaped at the critical lower portion of valve travel, affording the minimum perimeter for the area of opening. Easy passage of stock particles is assured over a wide flow range.

ONLY THE RATOGATE STOCK VALVE COMBINES THESE FEATURES

- ★ "Controlled Turbulence" washing action designed into Z-shaped body

  Rectangular port becomes diamond-shaped at low flow ranges for minimum perimeter-area ratio
- ★ Pneumatic or electric operation
- ★ Proven performance in hundreds of operating pulp and paper mill installations
- ★ Designed by a paper engineer for the paper industry

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Kay Now Director of I.P.;
Moran Heads Freeport Sales

STUART E. KAY (left), Vice Pres. of International Paper Co., has been elected to its Board of Directors, filling vacancy caused by death of WILLIAM N. HURLBUT. Mr. Kay joined I.P. in 1925 and became Mgr. of Mfg. for Northern Mills in 1936 and "Veep" in 1951. He is a native of Montreal, a graduate of McGill and a World War I overseas veteran, having served with "the McGill Siege Battery."

GEORGE B. MORAN (right), has joined Freeport Sulphur Co. as Vice President in charge of Domestic and Foreign Sales, according to Pres. LANGBOURNE M. WILLIAMS. Mr. Moran had been Vice Pres. of the Hanover Bank in N. Y. City.

Wintgens is Exec. Vice Pres.;
Gardner for Merchant Sales

HENRY G. WINTGENS (left), whose appointment to Executive Vice President of Charmin Paper Mills is announced by Pres. J. M. Conway. Mr. Wintgens has been Vice Pres. and Asst. Gen. Mgr. He is a native of Green Bay, Wis., and worked his entire career—over 41 years—with Charmin and its predecessor company, Hoberg Mills. L. A. GARDNER (right), who has been appointed in charge of all merchant sales for Nekoosa-Edwards Paper Co., while continuing to carry on his duties as Asst. General Sales Mgr.

I. P. Breaks Dow Jones "Ice"

—AND SPOILS A PULP & PAPER STORY

● PULP & PAPER magazine in the past four months has been doing some quiet research of its own as to why there had been no pulp and paper companies included in the Dow Jones famed Industrial and Composite Averages in all their 72 years' history.

Letters were sent to brokerage houses and other authorities, including Prof. Charles L. Jamison and a Prof. W. J. Eiteman, of the School of Business, University of Michigan, who had written a study of the Dow Jones averages for the *Michigan Business Review*.

It would be interesting if PULP & PAPER's "digging" could have had anything to do with surprise appearance on July 3 of a paper company in Dow Jones list of leading industrials for the first time since the list was introduced back in 1884.

International Paper Co., whose sales were almost $800,000,000 in 1955, took a proud place in the distinguished Dow Jones list of 30 industrial leaders. It replaced Loew's Inc., whose sales had declined to only $171,000,000, lowest of the 30, and below the 1955 records of seven pulp and paper companies (I.P., Crown Z, St. Regis, Scott, Kimberly-Clark, Container Corp., and West Virginia) as well as a pulp and timber company (Weyerhaeuser).

When this historic event took place, PULP & PAPER was getting all set for a story telling how the Dow Jones averages were overlooking a very stable and substantial growth industry.

PULP & PAPER is not going to pursue the point of whether its inquiries had anything to do with what happened. But before International "broke the ice" for this industry, some interesting facts were dug up.

HISTORY OF DOW JONES LIST . . . The oldest and probably the most generally recognized of the devices to determine stock price trends from an examination of the price movements in the market itself is the Dow Jones Theory. This theory and its line of reasoning are frequently misunderstood. It should be remembered that Dow Jones averages are regarded as a barometer of business cycles with major fluctuations in market averages foretelling major swings in business.

The history of the averages dates back to 1884 when 11 active stocks were included, nine of which were rails, whose daily closing prices were simply arithmetically averaged. As time went on, the industrial horizon dynamically expanded and great investment interest in fields of oil, steel, sugar, tobacco, etc., came into being. By 1896, the need for two averages, industrial separate from rails, was apparent. Substitutions took place from time to time and in 1916, a new industrial list was composed of 20 actively traded stocks. In Sept. 1928, the method of computing the averages was changed. The previous system of dividing aggreate market value of issues by their number, 20, was discarded to avoid distortions resulting from stock splits and to make future substitutions easier. The new method, and the one presently employed, uses an adjusted divisor, rather than the adjusted price quotations. The list of industrials was increased to its present number of 30 issues in Oct. 1928, and by 1938, an average of 15 utility stocks was also published.

It is generally assumed that a consistent effort has been maintained to keep the components of the averages in tune with an expanding economy. Apparently, the governing factor effecting a change in the list has been an awareness of the investor's increasing interest in a well recognized, stable industry and the resulting pressure of such activity.

ATTRACTIVE STOCKS PICKED . . . The Dow theory admits that a limited number of stocks reflect the price trend representative of the entire market. The stocks in the present Dow Jones averages are representative of the issues of large corporations. Each one of these companies has many shares outstanding which are owned by many investors, and, thus, would be expected to change hands frequently and produce active trading. In the language of the financial circles, they are reasonably attractive stocks.

PULP & PAPER's inquiries elicited comments that the paper industry

had not been included in the list of Dow Jones industrials because, until recent years, it has been like all "new endeavors"—"speculative and composed of companies seeking stature and stability in a highly competitive field," or "lacking vast capitalization and large numbers of outstanding shares."

But now that there are 30 pulp and paper companies listed on the New York Stock Exchange with annual sales ranging from $21,000,000 to $780,000,000, and with from 540,000 to 11,000,000 shares outstanding, a good reason for not including at least one or two of them in the industrial average was difficult to find.

But before PULP & PAPER could get to press with this information, and much more along the same line, International Paper Co. finally made the grade! Now that it has "broken the ice," maybe one or two others will make the list. Anyway, the industry is now recognized as stable and strong.

REPRESENTATIVE PULP AND PAPER COMPANIES SALES AND EARNINGS —FIRST QUARTER 1956—

	Net Sales (000)	Income Bef. Taxes (000)	% of Sales	Net Income (000)	Net Per Share
MARKET PULP (Also Lumber, etc.):					
Puget Sound Pulp & Timber	$ 6,009	$ 1,637	27%	$ 786	$1.01
Rayonier, Inc.	35,467	7,296	21	3,684	0.70
MacMillan & Bloedel Co., Ltd. (fiscal yr. ends 9/30)-(2nd Qu.)	45,319	7,656	17	4,058	0.77
Weyerhaeuser Timber Co.	76,379	19,283	25	11,383	0.46
NORTHERN INTEGRATED COS.:					
Diamond Match Co.	31,535	4,110	12	2,140	0.71
Eastern Corp.	6,934	812	12	409	1.11
Glatfelter, P.H. Co.	5,238	1,356	26	614	1.68
Great Northern Paper Co.	14,950	2,574	17	1,344	1.24
Hammermill Paper Co.	12,038	1,503	12	770	0.73
KVP Co., The (fiscal yr. ends 9/30)-(2nd Qu.)	14,363	1,937	13	1,001	1.22
Marathon Corp. (fiscal yr. ends 10/31)-(2nd Qu.)	35,337	3,875	11	1,795	0.50
Oxford Paper Co.	15,489	2,249	14	1,049	1.21
Warren, S. D. Co.	16,349	n.a.	-	1,305	1.33
INTEGRATED - NORTH AND SOUTH					
Champion Paper & Fibre Co. (fiscal yr. ends 3/31)-(4th Qu.)	41,607	n.a.	-	13,103	1.55
Crown Zellerbach Corp.	108,115	21,601	20	12,218	0.86
International Paper Co.	216,618	44,602	21	21,443	1.94
Kimberly-Clark Co. (fiscal yr. ends 4/30)-(4th Qu.)	69,679	n.a.	-	5,909	0.76
Mead Corp.	37,269	6,018	16	2,749	1.65
Riegel Paper Co.	14,269	1,943	14	903	0.77
Scott Paper Co.	66,829	12,055	18	5,790	0.72
West Virginia Pulp & Paper Co. (fiscal yr. ends 10/31)-(2nd Qu.)	48,832	9,333	19	4,683	0.92
SOUTHERN PAPER AND BOARD COS:					
Camp Manufacturing Co.	8,257	2,015	24	994	0.96
Union Bag & Paper Co.	34,415	9,518	28	4,517	0.85
PAPERBOARD COS. - NORTH AND SOUTH					
Container Corp. of America	57,530	9,208	16	4,420	1.72
Gair, Robert Co., Inc.	41,946	5,145	12	2,357	0.70
National Container Corp.	26,490	4,967	19	2,403	0.65
NONINTEGRATED PAPER COS:					
American Writing Paper Co.	n.a.	395	-	190	0.70
Sutherland Paper	16,234	1,939	12	931	0.87

The sales and earnings for the first quarter of 1956 were especially prepared for PULP & PAPER by Cyrus J. Lawrence & Sons, members New York Stock Exchange, from statistical services and published reports. While the figures are believed to be correct, no guaranty is given as to their accuracy.

What's Bad About Exchange Controls

They are often of advantage to bankers—not to businessmen. If "immoral" and "unjust" why not scrap them?

By RUTH SHALLCROSS

Consulting Economist and Lecturer, Institute of Paper Chemistry

● Before World War I, a world trader had freedom to travel to all parts of the world. He did not have to think about problems of exchange because currencies of the major countries were freely exchangeable anywhere by anyone into gold at a fixed rate. There were import duties to consider in some countries, but they were generally modest, specific, well-publicized and easily understood.

The period of Mercantilism (17th and 18th centuries) witnessed many nationalistic barriers to international trade, but not exchange controls. Both classical economists, Ricardo and Say, believed such controls would never be tolerated by the people as they imposed a form of slavery on them.

Foreign exchange controls spread from Soviet Russia to Central Europe (Nazi Germany) in the thirties and were adopted by many countries during World War II as a part of total war with the understanding of the people that they would be dropped directly after the war. Since then these controls have been justified in some countries as a "temporary" expedient in furthering the economic welfare state and for defense purposes.

Because monetary considerations are complex and the machinery of the government controls compound that complexity, the average businessman leaves their understanding for the most part to the monetary experts in banks and elsewhere. Because the controls are oftentimes advantageous to these experts, not many have vigorously opposed them.

DO "HOMEWORK" BEFORE GOING ABROAD . . . Understanding monetary matters in foreign commerce is very much like understanding the functioning of the price system in the domestic economy. To be in business in a free economy one does not need to know in detail the important thermostatic role playing by prices nor the intricacies of foreign exchange. But when government controls interfere with the free functioning of bargaining between buyers and sellers either within a nation or between nations, knowledge of the barriers to trade and their effect on respective economies becomes a necessary burden to producers and should be understood by consumers who have the vote to abolish them.

Exchanging some products abroad requires more knowledge of controls and their economic implications than do others. Raw materials such as pulp, for example, are usually much easier to export than finished products, such as paper or board. This is because pulp is scarce, a necessity, and in cases like Great Britain, imports do not compete directly with local industry. Avoiding the governmental barriers by exemption is thus more likely.

Although it is possible certainly to buy or to sell in foreign markets without tracing through the deep-rooted economic causes of monetary obstacles to foreign trade, it is highly desirable for any adequate world marketing research expert or staff to do so, if you, a potential or actual U.S. exporter of pulp, paper or board, are to know whether or not you can depend on a satisfactory and continuing foreign market.

It is an important part of world market research, however, that can be done without traversing the globe. In fact it is the sort of homework required before foreign visits are undertaken in order that pertinent questions in interviewing may be asked which would allow the researcher to assay future markets with intelligence. This applies to the exporting of capital as well as of products.

For those desiring to enter the world marketing research field for the first time, a briefing on some of the most important economic principles affecting foreign exchange, its restrictions, and the logical economic repercussions of controls may prove helpful. Useful sources which will perhaps also prove of value are appended.

WHY BLACK OR GRAY MARKETS? . . . Foreign exchange is simply that portion of any foreign money that is available for sale in return for dollars. Bankers acting as exchange brokers carry price lists of the various types of foreign money, just as paper salesmen carry price lists of the various grades of paper. When left free from government control, the price of money in foreign commerce, as of pulp or paper, fluctuates in accordance with supply and demand for it.

Under any type of price fixing, when the price is set too high—that is, above its free market value—unwanted surpluses result. (Witness farm surpluses.) Contrariwise, when the price of any currency or commodity is fixed lower than buyers and sellers would value it in the auction place of the market, shortages are bound to arise.

Thus the much-publicized "dollar shortage" was the direct result of underpricing dollars in relation to their currencies by foreign governments, just as a number of items became short from U.S. government underpricing during war-time price controls.

Likewise, black markets (gray, curb, or unofficial) appear in foreign

Another in Series

This is 4th of a series of articles on problems which are faced by pulp and paper companies in overseas trade. Many companies are just now entering the export business seriously—setting up new export divisions, etc.

The author received degrees at Nebraska University and Bryn Mawr, and studied in Europe for her doctorate. She lives at Madison, O.

THE AUTHOR . . .

Send questions you may want her to answer to PULP & PAPER, 1791 Howard St., Chicago 26, Ill.

exchange exactly as they have in the domestic market in pulp and paper when fixed prices were set lower than market value. Moreover, when the controls restrict trade to the near-prohibitive level, people (and even governments) desiring to exchange their products despite legal obstacles have resorted to primitive bartering.

BAD MONEY DRIVES OUT GOOD . . . Although governments can rigidly control the price and supply of foreign exchange, they cannot force people either to buy or sell. Thus economics comes into play through Gresham's "law"—that bad money drives out good.

When demand for controlled foreign exchange exceeds the supply allowed by a government, foreign money becomes scarce and domestic money more abundant (again the "dollar shortage")—a situation that U.S. loans or gifts cannot alter as they only make government expenditures more desirable and easier to justify.

Thus exchange price controls lead to the unbalance of exports and imports. They seem to necessitate direct controls, or rationing, such as import and export quotas and subsidies. None of these controls is needed in a free peace economy.

Fluctuations in exchange rates resulting from the many factors affecting either supply or demand of currency, as well as any other commodity in a free market, are important signals to action on the part of suppliers or buyers which tend to keep the two forces in near-balance.

By attempting to stabilize and reduce the fluctuations in exchange rates by government decree, new problems arise, such as "inadequate reserves," "deficits in the balance of payments," or chronic "unbalance of trade."

These were unknown in the years before exchange controls. Balance of payments and the exchange transaction will adjust to the desires of buyers and sellers in a free market.

When a government controls the exchange relationship of its currency with those of other countries, that currency is called "inconvertible," in contrast with one said to be "convertible" because its value is set by buyers and sellers freely bidding for it in uncontrolled markets.

Such inconvertiblity is justified by governments in the interests of attempting to keep trade within a national border (nationalizing foreign exchange) and thus isolating it from outside competition. This is done to achieve some economic goal deemed to be of the first importance, such as the "full employment policy" after World War II. By considering such a goal as the first importance, other economic goals, such as free trade, then become secondary.

HOW CONTROLS DO HARM . . . The task of freeing trade of monetary controls involves the convertibility of currency. "We have inconvertible currencies," Roepke states, "because we have exchange controls." Exchange controls bring about a disequilibrium on the exchange market which, he states further, "would not exist without erroneous monetary and fiscal policies of the national governments. Change these policies, and you can remove exchange control and thus make your currency freely convertible again."

There are some advocates of currency convertibility who maintain that it can be done without eliminating fixed rates as opposed to what is currently called "floating" or "free" rates. The price, they claim, could be set by the money managers at the near-market value so that it would equate supply and demand—however, putting in question the need for the control at all.

But overlooked is the fact that those fixing the price cannot possibly know what the near-market rate is without placing it on the market and letting people decide freely what they will pay for it. Without a free market, delays in official attempts to seek the market rate cause disturbances in the economy.

Thus when England attempted to correct its unrealistic and unworkable official rate of exchange—on Sept. 18, 1949, it was reduced from $4.03 to $2.80—the action came too late to prevent much of the harm done. Moreover, untold windfalls then went to those who guessed the government's timing correctly; likewise losses went to those who weren't so wise and who took the government at its word that it was not going to devalue its currency.

"IMMORAL" CONTROLS . . . Winder raises the issue of the injustice and immorality of exchange controls. They amount to arbitary confiscation of a part of a citizen's overseas earnings which denies the full right of private property—reward for one's labor. "Where currencies are sold at controlled rates," he states, "one of the parties to every transaction will inevitably receive less than he is entitled to. Someone, in fact, is robbed."

For many years the controls encouraged British imports and discouraged British exports. "Sir Stafford [Cripps] over a long period," Winder reports, "was paying our [British] exporters 5 shillings for their dollar when in fact they were worth 7 shillings." All the time he was pleading "that Great Britain must 'export or die.'"

That this should have ever been accepted in a historically free trade country like England where bare economic existence is dependent upon foreign trade is one of the most astounding economic anomalies of this post-war era.

Because exchange controls have led to balance-of-trade difficulties, a growing clamor for free convertibility of national currencies has arisen all over Europe. And for political reasons official lip service within recent years has had to be paid to it as a cherished goal, although excuses are found continuously for not bringing it about, quite yet. For several years, convertibility has been expected. The newspaper headlines, however, over this last year tell the story:

"Europeans set to back convertibility of money but shy from naming date;" "The French ability to maintain convertibility doubtful;" "Belgium and Germany would convert but want sterling made convertible first;" "Italy is in no hurry;" "Sweden prefers delay;" Denmark and Norway not ready;" "Convertibility desired but far off for Turkey;" "World inches toward currency convertibility but progress has slowed."

A country doesn't inch toward convertibility—to convert is to convert, as Canada did on a specific day, Dec. 14, 1951. Why, then, the hesitation when exchange controls have brought international trade to the brink of economic disruption?

SETTING BAD EXAMPLE FOR INDUSTRY . . . The only logical an-

swer seems to be that to carry out the assumed all-important social welfare plans and meet requirements of the "cold war," governments feel they must live beyond their means, which encourages industry to go in debt beyond its means. The British government, for example, has been able to do this by getting loans or gifts from the United States to bolster its controlled economy or it gets loans from its own people which brings on inflation. (The current cry everywhere in Europe is how to stop the scourge of inflation.)

The resulting deterioration of the value of the currency in terms of other curriencies that are more stabilized makes foreign competition undesirable. The "other" currencies are those that have been made "hard" by free market competitive forces which allow for ever-increasing productivity, such as the Swiss franc and U.S. and Canadian dollars.

Blockades to free trade, such as the rigid foreign exchange controls are justified as being "temporarily" imperative to stop the undesirable competition. But they have been "temporarily" so since World War II.

A future article will attempt to clarify further the future prospects for free trade which has an important bearing on your future export markets. It will attempt to answer whether or not present international organizations can aid in eliminating exchange controls and hence in restoring universal convertibility of the world's currencies.

Some Sources For Those Interested In Foreign Markets

During the last years of World War II when a decision was being discussed by a company president and his board of directors as to whether or not to build a pulp mill in a foreign country that had a rigid system of exchange controls, he made the statement that one of his first tasks was "to get out some economics books."

But these books didn't help him much. Those that were written before the thirties did not discuss exchange controls because the idea was virtually unknown at that time. General economics books written since then may make some mention of monetary barriers to foreign trade but generally leave to specialized authors on money and credit or international trade the explanation of the cause and effect and ramifications of them. Even for those determined to understand international trade barriers, a search through the literature turns up only a few volumes, usually large and written in a difficult academic jargon.

Having personally searched for years for a short elementary textbook that would explain in easy-to-understand language to prospective industry men the nature of foreign exchange and the economic implications of its control, I've been particularly conscious of the lack.

A great many articles have appeared. Most of them, however, are written about current developments with the assumption that readers have sufficient background into which the news accounts can neatly be fitted. Within the last few years several pamphlets and booklets have appeared which may help you or your staff if you are contemplating doing any marketing analysis in foreign countries.

A company staff member assigned to study possibilities for developing a foreign market who is not already an experienced student of international trade, could do no better than to obtain a little booklet written at the request of the British Institute of Economic Affairs by the popular London writer on economic subjects, George Winder. It is entitled, **THE FREE CONVERTIBILITY OF STERLING** [The Batchworth Press, Ltd., London, 1955, 62 pages, 2 shillings sixpence; available in the library of The Institute of Paper Chemistry.] In simple, lucid language he explains briefly exactly what foreign exchange is, how the rates are set and foreign payments made. When he has clarified the practical economics of exchange, he raises the issue of the justification of controls.

Another clearly written pamphlet, which presupposes that some study by the reader has already been done in the field, is: **CURRENCY CONVERTIBILITY,** written for the American Enterprise Association by the Harvard Professor of Economics, Gottfried Haberler who is also past president of the International Economic Association. [No. 451 in the series, "National Economic Problems," published by the AEA, 1012 Fourteenth St., N.W. Washington, D. C., 1954, 43 pages, $1.]

A third short report of a study by the National Industrial Conference Board, **CONVERTIBILITY AND FOREIGN TRADE,** is worth consideration. [Studies in Business Economics, No. 45, 1954, 159 pages, $3, including an excellent study of comparable costs of manufacturing between the United States and other countries—pulp and paper not mentioned specifically.]

Two economists, Wilhelm Roepke and Henry Haxlitt, have written good articles on these subjects in **NEWSWEEK** and **THE FREEMAN.** Some good illustrations of the effect on the economy of the exchange controls are given by Melchoir Palyi in his booklet, **DOLLAR DILEMMA** [published by Henry Regnery Co., Chicago, 1954, 200 pages, $2.75] and by Hans F. Sennholz in his book, **HOW CAN EUROPE SURVIVE.** [D. van Nostrand Co., N. Y., 1955, 319 pages $4.]

For a current detailed description of the exchange control systems of individual countries, the **ANNUAL REPORT ON EXCHANGE RESTRICTIONS,** published by the International Monetary Fund, is advisable to have. [Obtained from Secretary of the Fund, 1818 H. St. N.W., Washington, D. C.]

For those wishing to dip into larger volumes, a more elaborate description of various forms of foreign exchange practices since World War II is found in Raymond F. Mikesell's book. **FOREIGN EXCHANGE IN THE POSTWAR WORLD.** [Twentieth Century Fund, N. Y., 1954, 647 pages, $5.] However, this book needs to be read within the framework of the theory of money.

Undoubtedly the most authoritative book on that subject is: **THE THEORY OF MONEY AND CREDIT,** Ludwig Von Mises. [New edition, published by Yale University Press, New Haven, 1953, 483 pages, $5.] —R. S.

South's Safety Record Improves, 14 Perfect

Fourteen Southern paper mills show a perfect safety record for the first quarter of 1956, according to the Southern Pulp & Paper Safety Association.

Champion Paper & Fibre Co. at Pasadena, Tex., leads the group with the highest number of man-hours exposed—991,440. Mills with perfect records thus far are Champion at Pasadena; Ecusta Paper Corp., Paper Div., Pisgah Forest, N.C.; Coosa River Newsprint, Coosa Pines, Ala.; Georgia Kraft Co. of Macon, Ga.; National Container Corp., Valdosta, Ga.; Chesapeake Corp. of Va., West Point, Va.; Mead Corp., Lynchburg, Va.; Buckeye Cellulose Corp., Foley, Fla.; Riegel Paper Corp., Acme, N.C.; Rayonier Inc., Jesup, Ga.; National Container Corp. of Virginia, Big Island, Va.; Certain-Teed Products Corp., Savannah, Ga.; The Mead Corp., Nashville, Tenn.; and Banner Fibre Board Co., Wellsburg, W. Va.

Of the first 30 mills, 13 others had only one accident. The highest frequency rate of the 63 member mills was 30.74 and the highest number of accidents was 19.

Frequency rate of the entire association thus far in 1956 is 5.62, lower than last year's final average of 7.43.

St. Regis Moves

St. Regis Paper Co. has moved its main headquarters offices from 230 Park Ave. to space in a new building at 150 East 42nd St., New York 17, N. Y.

HEWN OUT OF A YELLOW PINE FOREST . . . That's how land at Evadale was cleared for Eastex. Low buildings in foreground—large one is main office; small one, personnel and wood procurement offices. The long row of buildings—shipping and finishing at this end—Fourdrinier machine room at far end. Pulp mill, bleach plant and chlorine dioxide generation (outside installations at right) are grouped in back right area. Farther back—200 ft. stack and power-recovery group. The 750 ft. long stacks of wood on each side of a flume are seen behind the stack. Forest for hundreds of miles hem in this mill.

How East Texas Co. Was Born

The intimate story of a rising new Texas industrial "star" by one of the men who had a major hand in creating it

By RICHARD A. McDONALD

Chairman, Executive Committee, East Texas Pulp and Paper Co.

(As told to a PULP & PAPER Editor)

● Time Inc., called by one historian "the greatest success story in American journalism," once saw a striking example of just how closely this success was tied to the nation's pulp and paper industry. It was this example—involving Life magazine's unprecedented first-year growth—which set off the chain of events leading years later to the formation of the East Texas Pulp and Paper Co., whose mill is currently tapping that region's pulptimber resources more completely than ever before.

The year was 1937, when Life was skyrocketing to new circulation highs. One of the biggest headaches was to acquire an adequate supply of coated paper (the entire country's total output then would barely meet Life's needs today). Time Inc. combed the country for new sources, and began giving financial backing to the machine coating process, which then was still being developed. One of the men involved in the paper search was Time's executive vice president, Charles L. Stillman, and one of the places he visited was Houston.

Near Houston, the Champion Paper and Fibre Co. had recently completed a bleached sulfate mill. Mr. Stillman reached an agreement with Champion to install a paper machine to make Life paper, and from then until the machine went into operation in 1941, Mr. Stillman was in frequent contact with the Houston area. It was during these years that Mr. Stillman and Time became acquainted with Houston Oil Co. of Texas—first of all as the company which furnished Champion's fuel supply of natural gas, and later as a company which had not only fuel but the water and timber necessary for formation of a new East Texas pulp mill. Thus, although the Evadale mill produces no magazine paper, Time's ownership of it is an outgrowth of the company's close interest in the pulp and paper industry and the early contacts with the East Texas area.

PINE CAME IN FASTER THAN SETTLERS . . . Houston Oil had come into being just after the turn of the century, when Beaumont's Spindletop gusher brought a new industry to East Texas. Houston Oil had acquired 650,000 acres of timberland,

Continued on page 68

The Story of Time and Life

How needs of Life magazine for machine coated paper resulted in Time Inc. getting into pulp-paper industry

By CHARLES L. STILLMAN
Executive Vice Pres. of Time Inc.

● Although Eastex makes no paper for Time Inc. publications, the beginning of the East Texas Pulp and Paper Co. may be traced directly back to the beginnings of Life Magazine twenty years ago.

From its founding in 1922 until Life began in 1936, Time Inc. had been just another small publisher buying paper at the contract market price and if Life had been just another magazine, we would have had no occasion to change our ways.

But Life literally ran away with its owners. The magazine was committed to being a "slick paper" magazine to sell at 10¢. We thought we knew where to get the estimated 10,000 tons of the entirely new machine-coated paper for the first year—in an orderly fashion by the usual contract methods—but we never had a chance to find out. In the tight 1937 market the requirements turned out to be several times that much—and the magazine became a mass advertising medium in a year instead of the estimated five years.

In order to show any prospect of ultimate profit both the paper and the printing (and the ink) had to be completely rethought and re-engineered from the trees and clay pits clear through to long rows of bindery girls handling each individual signature at the printing plants. We had no organization and relied on our suppliers and their equipment sources in turn. We decided then that we would build a supplementary organization of a permanent character and make the job a continuous one over the years. The headquarters for this organization is our Research Lab at Springdale, Conn. where a staff of some 100 persons is now employed.

"Machine coat" was thought of by us in terms of a premium grade of newsprint and most of our sources of some 250,000 tons a year are erstwhile newsprint mills in the North, extending across the country from Maine to Oregon.

TIME INC. EXECUTIVES ON EASTEX EXECUTIVE COMMITTEE. L to r: CHARLES L. STILLMAN, Executive Vice Pres. of Time Inc., is Chairman of the Board of Eastex. A native 52-year-old New Yorker, and Yale graduate, he is in overall charge of production and financial affairs of Time-Life magazines. Eastex has been called his "dream-child" and the article by his associate, R. A. McDonald, in this issue, explains why.

ROY E. LARSEN, President of Time Inc. takes over more direct interest in Eastex as he joins its Executive Committee, under the new organization created when Time Inc. bought out its partner in Eastex, Houston Oil.

DAVID W. BRUMBAUGH is Vice Pres. and Asst. Secy. of Eastex and Vice Pres. and Secy. of Time Inc. He joined Time as head of its accounting department two years after attending Harvard Business School in 1933. He was born in Roanoke, Va., and had graduated from Roanoke College.

These three and President R. M. Buckley and R. A. McDonald are members of the Eastex Executive Committee and are Directors. Mr. McDonald is Chairman of the Committee.

LOOK TO THE SOUTH . . . The one notable exception to this was, and still remains, the mill at Pasadena, Texas. It was thought even in 1938, when the deal was made, that the raw material and fuel and power factors were limited in the North, actually as well as relatively to the South—and that for long range diversification we should develop at least one Southern source of acceptable paper.

At the same time thought was given to the possibility of buying timberlands and a mill site as a hedge against inflation—and to contribute gradually through timber growing some of the vast quantities of wood consumed in our end products each year. But instead Time Inc. recognized in the Houston Oil Co. with its surface ownership of the lands of Southwestern a more expedient method of investing the limited funds available for such a project. Accordingly, as funds became available they were invested in the stock of Houston Oil so that upon the liquidation of Houston Oil, Time Inc. had through liquidation after taxes $19 million of the $35 million required to buy the other 50% of Eastex and the 660,000 acres of timberlands.

It is a source of deep personal regret to us that our constructive associations with the management and directors of Houston Oil Co. had to come to an end with the liquidation of the oil company. The friendships made will remain very important to Time Inc. and its subsidiary, Eastex, as individuals as well as managers of the enterprises.

WHAT THE FUTURE HOLDS . . . It is obvious from this recital that Time Inc. regards Eastex as a potential source of supply for its own papers in case of need. It must be equally obvious that a bleached kraft pulp mill is only one stage in the production of machine coated paper.

Meanwhile, we believe Eastex at its present site and with presently available wood, water and fuel presents a challenge for further expansion. Should such expansion be designed for the production of Time Inc. paper, it is not contemplated that present Eastex grades and customers would be affected. So Eastex customers have nothing to fear.

How East Texas Was Born

Continued from page 66

leasing cutting rights to Kirby Lumber Co., which was formed about the same time. As the virgin long leaf pines were cut, Houston Oil tried to encourage resettlement of the land, and created a subsidiary, Southwestern Settlement and Development Co. (now a division of East Texas), for this purpose. But settlers were hard to attract, and the young pines kept growing back. Much of the land was obviously better for timber growing than for agriculture; so in 1938 the company changed its tactics, concentrating now on protecting and promoting the growth of timber in the vast tract extending into 12 counties. Pulpwood cuttings gradually increased, but there was no mill near enough to completely exploit the area's pulptimber resources.

Meanwhile the national demand for paper accelerated at a time when World War II was slowing the growth of pulp and paper capacity to a standstill. By 1945, with the circulation of its magazines rising year by year, Time Inc. was hard pressed to increase its paper supply in the postwar market. For a brief period, the company purchased three paper mills located in Maine, Michigan and Minnesota, and built a coating mill to ease its situation. However, these mills were all soon sold to St. Regis Paper Co. Although Time thus quickly retired from manufacturing its own publication papers, it nevertheless retained an interest in the future growth of the now fast expanding pulp and paper industry. Mr. Stillman was convinced that a plentiful supply of basic pulp and board was essential to a growing economy.

REMEMBERS THE TEXAS TIMBER . . . During this period Time's long term interest in the East Texas area had not been forgotten. Since 1940 Time had been buying Houston Oil stock, a program which continued until the publishing firm became one of the largest stockholders in Houston Oil.

At war's end, Champion and Time began talking of another East Texas mill. Champion had conducted engineering surveys, including water well and stream tests, in search of a mill site, and in 1945 located and purchased a site at Evadale, 24 miles north of Beaumont and in just the right place to use the timber lands of Houston Oil. But when the Time Inc.-Champion plans failed to materialize, Champion sold out the mill site to Time, with a five-year option in case the two companies could get together later on. The option expired in 1950, and although Champion has remained one of Time's major suppliers of magazine paper, the publishing firm, now the owner of a choice mill site, began looking around for other partners in the East Texas venture.

"NOT KIND OF MAN FOR AN IDLE LIFE . . ." RICHARD A. McDONALD, of Oakland, Calif., Director and Chairman of the Executive Committee of East Texas Pulp and Paper Co. He organized its top operating management and paper "know-how" after retiring from Crown Zellerbach. He says in this story—"Mr. Stillman knew I was not the kind of man to settle into an idle life." Just before the East Texas project developed, Mr. McDonald had served as Administrator of the National Production Authority in Washington, D. C. Later he went to India as business representative of the U. S. government.

In the meantime changes had taken place at Houston Oil. In 1950 a new president, Harold Decker, had taken over. In addition to being a very able oil operator, Mr. Decker by 1952 had developed a keen interest in the prospects of building a pulp and paper mill to use more fully the Houston Oil Co.'s timber crop, which yearly was growing larger because of the intensified reseeding and forestry program. Several three-way negotiations were begun, among Houston Oil, Time and various paper companies. But in addition to normal difficulties of putting together a three-party agreement, there were other complications introduced by the Korean War, including material shortages and a return of the excess profits tax.

Even during the three-way talks, Mr. Decker had decided that Houston Oil should own at least 50% of any mill that would be using Houston Oil's timber resources. Time Inc. liked the idea of a 50-50 agreement. Then came the matter of organizing a management staff and obtaining financing.

Mr. Stillman was aware that I was retiring from my job as executive vice president of Crown Zellerbach. And he knew I was not the kind of man to settle into an idle life. When I found that my associates at Crown Zellerbach were willing, I took over the assignment.

(EDITOR'S NOTE—Mr. McDonald modestly omits some important points here. Not since the 1930's had an integrated pulp and paper mill been built which was not in a position to call on a parent pulp and paper company for management and "know-how," as well as financing. These were big and unique problems that faced East Texas sponsors. It was Mr. McDonald who stepped in at this point to solve these problems, as his associates emphatically assert. Mr. Stillman had known and admired Mr. McDonald for many years through Time's dealings with Crown Zellerbach. In accepting, Mr. McDonald declined the position of chief executive officer for himself, but he was the organizer behind the front lines.)

FIRST ACTIONS . . . One of my first tasks was to recommend an architect-engineer to plan and build the mill. My choice was a Canadian firm, H. A. Simons, Ltd., of Vancouver, B.C., which had handled several big jobs

"WE ARE IN A BEAUTIFUL POSITION . . ." R. M. (MIKE) BUCKLEY, President of East Texas Pulp and Paper Co., tells highlights about his company in this article. Mr. Buckley was born in Marmarth, N. D. He studied business administration at the Univ. of Washington and went to St. Regis, Tacoma, Wash., in 1936 to work in sales and operations. He became later Assistant to the late Ossian Anderson, builder of Far West market pulp mills and companies, who perhaps did more than any other individual to make U.S.-made woodpulp a world trade commodity. Mr. Buckley became Vice Pres. and Sales Mgr. of Soundview Pulp Co. in 1943 and joined Eastex after the Scott-Soundview merger. He came to Evadale with his Tacoma, Wash.-born wife and large family Apr. 1, 1953.

for Crown Zellerbach in the past.

Now plans moved forward rapidly. Donald C. Slichter the Northwestern Mutual Life Insurance Co.'s vice president in charge of industrial development, was convinced of the feasibility of the plans, and Northwestern agreed to handle first mortgage financing. Pulpwood agreements were signed with Houston Oil, and a working capital loan secured from the Chase National Bank of New York. In Dec. 1952, after two days of signing papers in the Time Inc. offices in New York, East Texas Pulp and Paper Co. was created.

Construction of the Eastex mill helped spark an industrial revolution for Evadale and the nearby town of Silsbee. Soon after plans for the mill were completed, the Kirby Lumber Co. announced that it would build a $16,000,000 sawmill in Silsbee. Two plants thus cooperate in efficient usage of the area's timber, since Eastex provides a market for chips from the Kirby sawmill operations.

WATER SUPPLY . . . Eastex decided to drill for its water supply rather than utilize the Neches River which flows through the area. The Neches water was not only heavily committed for rice farming and for Beaumont industries, but was inferior in quality to the underground supply. The Layne Texas Co. had completed test drilling for wells before construction began, and by Feb. 1954 the company had brought in the eighth and final well needed to furnish up to 24 million gals. of water a day to the mill.

The water supply is low in solids and chlorides, making it easily adaptable to paper mill operations. Conditions are very favorable for recharge of the water bearing sands from rainfall and stream flow. In the event of increased water requirements, geologists compute that added wells could produce an additional 25 million gals. a day on a firm sustaining basis.

The problem of effluent disposal was considered as an integral part of the mill design. W. A. Maggio, an engineer from the National Council for Stream Improvement, supervised planning and construction of a $1,000,000 disposal system and was engaged by Eastex after the mill was completed. A 14-mile effluent canal was constructed from the mill, terminating in a 4500-acre swamp which had been purchased by Eastex. The swamp area drains into the Neches River, but well below the intake for the City of Beaumont's water supply. Also, the treatment and disposal of the effluent is designed to assure that the final effluent does not materially change the quality of the river water at the point of entry (for pictures and complete story of effluent system see PULP & PAPER, page 66, May 1955 issue).

FOURTH PULP AND PAPER MILL IN EAST TEXAS. Map shows the Orange Pulp & Paper Co., Champion Paper and Fibre at Pasadena, Southland Paper Mills at Lufkin, new Eastex mill at Evadale. Champion, whose mill was built 19 years ago, bought the Evadale mill site eleven years ago. Later was presumed to sell it to Time Inc. Part of chip supply for Eastex comes from new Kirby sawmill at Silsbee, 6 miles away.

A MEMORABLE TRIP . . . While plans were going forward, Mr. Stillman, Mr. Decker and myself were at work securing a management team. One day in Jan. 1953, just a month after Eastex was born, we three were riding from the mill site back to Houston and were talking about the recent merger of Soundview Pulp Co. with Scott Paper Co. Mr. Decker asked if there was a good man at Soundview who might now be induced to come with Eastex. Mr. McDonald thought a minute, then said, "By gosh, there is, and his name is Mike Buckley."

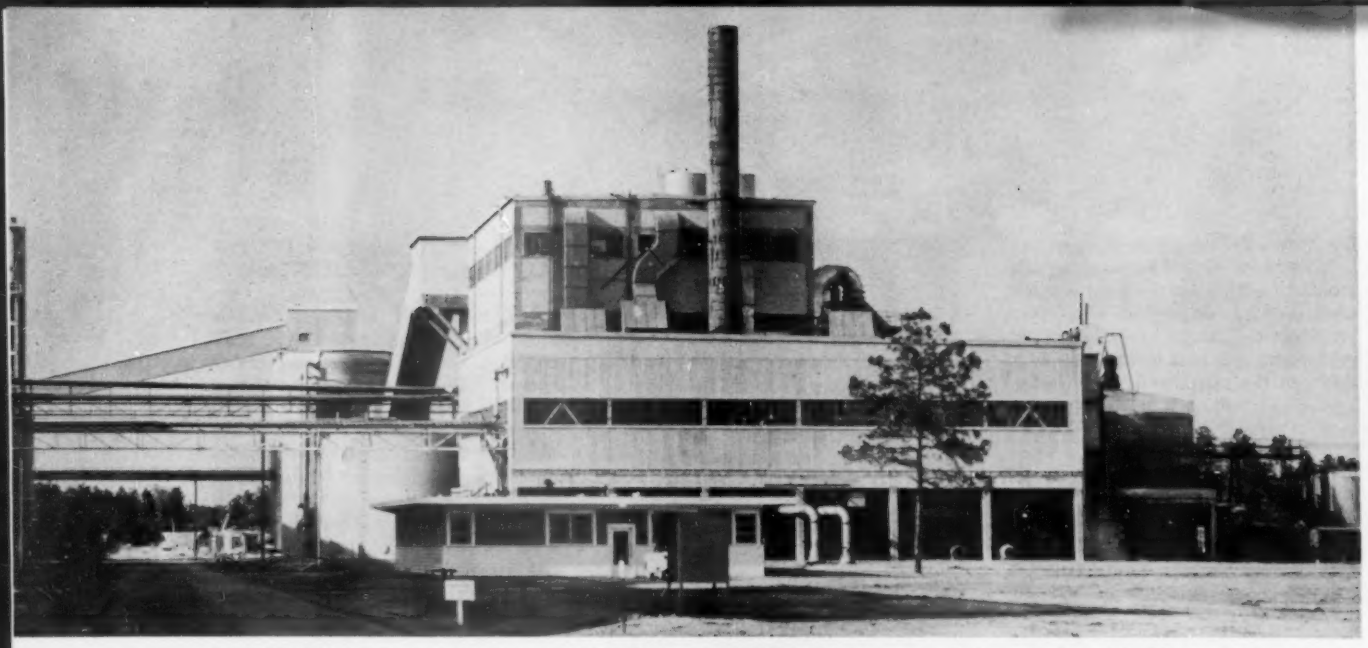
The man in question, R. M. Buckley, had been in the pulp and paper industry since 1936, when he joined St. Regis Paper Co. as assistant to the executive vice president. He went to Soundview in 1943 as assistant to the president and was elected a vice president in 1944. After the merger he had continued as an officer of the parent company, with headquarters at Scott's Soundview division.

Eastex's three-man executive committee of Messrs. McDonald, Decker and Stillman contacted Mr. Buckley and he was soon named executive vice-president and general manager of Eastex. Mr. Buckley moved quickly to East Texas and began working with Mr. Simons during the planning and construction stages. A few days after Time took over full ownership of East Texas Pulp and Paper Co., Mr. Buckley became president—on June 11, 1956.

We then invited an old associate of

HEADING UP PRODUCTION AT EVADALE . . . ALBERT G. (BUFF) NATWICK, Vice Pres. and Resident Mgr, was born in Centralia, Wis., which later became Wisconsin Rapids and belongs to a family with many prominent representatives in this field (also a famous cousin—Movie and TV actress Mildred Natwick). Mr. Natwick graduated from Chicago University, and went to work for Nekoosa-Edwards Paper Co. where he was eventually Night Supt. of all mills. He went to Merriton, Ont., as Gen. Supt, later Mill Mgr., then was Asst. Res. Mgr. of the big Crown Zellerbach mill at Camas, Wash., for 20 years. There he started an executive training program, was in charge of production and quality and was Dean of the famed Crown Z Paper School. For Eastex, he made a trip to Sweden, where he got ideas for new equipment, noted in PULP & PAPER's story in this issue.

HEADS UP SALES OF EASTEX PRODUCTS. CLARKE H. MORIAN JR., Vice President and General Sales Mgr. of Eastex. He was born in Mobile, Ala., and graduated from Haverford College, Haverford, Penn. He had extensive sales experience in the industry before going to Evadale. Had been Eastern Sales Mgr. for Hollingsworth & Whitney Co., for three years, with his headquarters in New York.



WHERE PULPING, WASHING, BLEACHING IS CONCENTRATED . . . On platform to right of building is chlorine dioxide generating unit according to Olin Mathieson design. Bleach and brown stock washers are parallel and digester operating floor is on same level in highest floor shown. Small building in foreground is for research and technical staff. Back of this is screen room. Brown slack filtrate tanks are on left side of buildings.

mine, A. G. "Buff" Natwick to join Eastex as resident manager. He had been instrumental in starting an executive training program for Crown Zellerbach and was assistant resident manager at its Camas, Wash., mill.

Soon enough to play a direct part in deciding with Mr. Simons on specifications for the new mill, Mr. Natwick joined us in 1953. When he underwent an operation in the fall of 1954, during the final months of construction, an emergency call went out to George W. Charters, who was retiring from the Camas mill, and Mr. Charters came to Texas to fill the gap, as acting resident manager.

Another key man was added to the staff, when Clarke H. Morian, Jr., became sales manager. Belonging to an old paper family, his father as president of Cherry River Paper Co. had pioneered in the manufacture of paper for drinking cups and milk bottles. Mr. Morian came to Eastex from Hollingsworth & Whitney where he had been Eastern sales manager.

Both Mr. Natwick and Mr. Morian became vice presidents of Eastex on June 11. From paper companies all over the U.S. and Canada we drew the other men who have contributed so much to the efficient functioning of the Eastex management group.

The mill had been originally planned for a capacity of 250 tons daily of bleached sulfate pulp and paperboard, but the capacity was raised to 300 tons before the plant began operations on schedule, in Dec. 1954, just two years after the company was formed, and now it has reached 350 tons. For this production Eastex is using 240,000 cords of pine and hardwood pulp annually.

The new mill is using timber resources in the area more efficiently than ever before, but with Southwestern's modern tree farming techniques paying off, more timber is still maturing yearly than is being cut. With operating budgets being met, and the mill production completely sold out, Eastex is currently investigating expansion possibilities.

SOME BASIC FACTS ABOUT EASTEX

What Makes a Mill Succeed

BY R. M. BUCKLEY

President, East Texas Pulp and Paper Co.

(As told to a PULP & PAPER Editor)

● The prime consideration in the selection of this region for our mill site were the abundance of quality pine and hardwoods and a ground water supply of facilities, an abundant supply of skilled labor, good residential sites and a favorable climate.

Another favorable aspect is the tax structure of Texas. There is no personal income tax, no corporate income tax and no general sales tax. The stability of the Texas government was another decisive factor. The state government policies do not fluctuate from year to year and Eastex can count on paying its fair share of taxes without fear they will be greatly increased.

Conservation of the forest resources is of supreme interest to us. We will use large quantities of pulpwood and we plan to be here for a long time. Our contracts for pulpwood extend for as long as 20 years. With the help of our independent wood contractors and others we intend to keep new crops growing at a greater rate than we can consume them. Most of the wood we are using is second growth pine, about 15 years old, and we are also using gum hardwood.

IN POSITION TO EXPAND . . . We are in a beautiful position to install additional paper machines if that should be decided upon by our directors. We are not affiliated with any consuming company—no box plants nor end use to divert our products. We are strictly a market mill with no restrictive ties, and so in a strong position to serve our customers for years to come.

We are not equipped to make Time-Life paper. If we did put in a machine for this purpose, it would not upset the mill's balance and products. It would be in the form of additional production. The only instructions we have from our parent firm, Time Inc., is just this:

"Run your own mill and your own business."

There are no reciprocity requirements, no strings attached whatever.

What problems we have had here are no greater than other mills have had. We have been very well received; Beaumont people and all others in this region have been most friendly

and cooperative. Labor, chemicals, transportation and supplies of all kinds are abundant and booming. Many of our chemicals are being obtained from plants in the vicinity of our mill.

RIGHT PEOPLE RUNNING MILL . . . We have the right people to run our operation, to sell our products and to service our customers. Our organization is trained to turn out the highest quality of products, plenty of them, so we shall stay in business and expand as conditions warrant such expansion.

The qualifications of each employe were carefully considered. It is true that in this area there were farm workers and oil lands workers who had never seen a pulp or paper machine, but with the aid of our training program they have developed into excellent pulp and paper operators. We brought in many key men and lead men—they came from 30 different states—from East, South and Midwest and Far West. Superintendents, assistant superintendents and foremen brought along their close friends. Many wanted to return to the South. We brought here about 150 workers, including supervisors and pulp and paper makers.

We have over 485 employes. About 385 are hourly employes and the rest are supervisory and clerical. They take home annual pay totalling around $2,600,000. Those of our Southwestern Settlement and Development Co. division take home about $420,000.

RECALLS STARTUP . . . Many of us feel as though we are old neighbors now. About 150 men were brought in two months before the startup of our $28,000,000 mill.

Construction work started Sept. 1, 1953. On Dec. 5, 1954 at 12:03 p.m. our new machine started making unbleached pulp. In less than a week we made our first linerboard. The bleach plant started up Jan. 11, 1955. Then on Jan. 21 we made our first chlorine dioxide bleached pulp. Every step started up smoothly, with no more serious hitches than would be expected.

We have set up high specifications for all our products. We are stressing our market woodpulp, and in chlorine dioxide bleach, we have a softwood grade and a hardwood grade which are run separately. We have had remarkable acceptance of our bleached Fourdrinier board grades—milk container, carton, file folder, tagboard, cup and other white Fourdrinier grades. We have bettered customer specifications.

We have double screening of pulp and indirect cooking, which is not common in the South. Brightness in pulp today is like high octane in gas—it is continually going higher and to be successful a mill must be equipped to match competitive sheets. We have vertical on-machine coating (the Faber process) for our board, and we are in a flexible position to carry on any type of coating, using clays, caseins, etc., or go to synthetics as they are doing in the cup field.

OTHER EXPENDITURES . . . Texas chemical industries are getting a large part of the $1,750,000 we spend annually for chemicals. We spend annually about $4,000,000 for wood from small and large holdings, and over $2,000,000 of this goes to more than 600 workers in wood harvesting.

About $2,000,000 is spent on outgoing transportation and another $775,000 on incoming. The Santa Fe is our railroad service. We ship over 120,000,000 tons of products a year. About half our wood, some 50,000 cords, comes by rail from as far as 100 miles, and the rest by truck. Timber is blocked out solid around us.

Finally, I would like to mention some other things we have brought to Evadale and Silsbee. The first modern school Evadale ever had—without the mill it would not have been here. We gave temporary help through a land trade for its site and our taxes pay for the great majority of the cost of construction and operation. Just east of Silsbee (now in the city limits) we bought a 125-acre site, developed 150 lots, two or three to an acre, with streets, water, sewer, light and gas. Winding streets, cul de sacs, different design homes make it attractive. This is not a company town, for the lots have been sold to others and we welcomed doctors, dentists and teachers. We stipulated selling prices for contractors to protect employes, and assisted them financially where necessary.

In our short time here, I think we are accepted as good citizens of Evadale and Texas.

PRODUCTION CHIEFS AND PLANNER . . . RAY BROWN (left), Supt. of Pulp Mill. His responsibility also embraces Wood Yard and Preparation, Bleach Plant and Recovery and Chemical Plants. He was born in Fisher, Tex., but after starting at the Calcasieu, La., mill in 1925, moved to Oregon to live for 23 years. He went to Oregon State College. was Pulp Supt. at St. Helens, Ore., mill. But Evadale was "back home" for his wife, a Beaumont girl who had taught school there.

JOE DUNN (middle), Paper Mill Supt. Also responsible for finishing. Another Mobile, Ala., native in Eastex. He worked in International Paper Co. mills in the South from 1930 to 1948. For three and one-half years prior to joining Eastex, he was Paper Mill Supt. at Potlatch Forests, Inc. in Idaho.

FRED W. NASON (right), Director of Research and Planning. Born in Haverhill, Mass., he got his b.s. and master's (1911) in chem. engineering at Univ. of Maine. He was associated with the Hollingsworth & Whitney mill at Waterville, Me., for many years until he went to Boston headquarters as Supt. of all H & W mills, then as Tech. Director, and finally was Asst. to Exec. Vice Pres. L. Gordon Glazier from 1940 until Nov. 1954.

TOUR BOSSES AND WHERE THEY ARE FROM . . . Interesting how the tour bosses for Eastex came from far and wide.

Paper mill tour bosses serving under Supt. Dunn are J. E. Williams, who came from Bastrop, La.; James H. Philley, formerly with Potlatch at Lewiston, Ida.; Brookshire C. Moore from Lewiston; and Leo Youngchild from West Tacoma, Wash. (nephew of well known industry consultant, Cap Youngchild).

Pulp mill tour bosses reporting to Supt. Ray Brown are Tommy Benson from Lewiston, Ida.; Owen W. Harmon from Longview, Wash.; Wayne Robinson from Pasadena, Tex.; and Percy S. Lewis, Jr. from Acme, N. C.

Robert L. Paret, who came from Riegel Carolina at Acme, N. C., is master mechanic; H. H. Bonifay and Walter F. Bell are assistant master mechanics.

PULP & PAPER CANDIDS FROM EASTEX. At left—BUFF NATWICK, Vice Pres. and Res. Mgr., and RAY BROWN (right), Pulp Mill Supt. watch a digester blow. From Mr. Natwick's office window, behind him, he can see virtually the entire mill, as a paved road splits the Paper Mill on the left side, Pulp Mill on the right. At right—FARLEY M. BOWERS (left), in charge of Production Scheduling, lines up a "run" with Paper Mill Supt. JOE DUNN (right), in Joe's office in the mill.

MORE EASTEX MEN . . . GEORGE W. CHARTERS (left), who was Acting Res. Mgr., when his old friend and associate, A. G. NATWICK, was temporarily laid up when he underwent an operation. Mr. Charters stayed on several months in 1955. He was an Asst. Res. Mgr. at Crown Zellerbach, Camas, for 25 years, going there from E. B. Eddy Co. He was born and raised in Wisconsin. He is in consulting work on the West Coast, still has farm home at Camas.

JOHN S. HARTMAN (right), Plant Engineer. Born in Athens, Mich., he attended Michigan State College and Univ. of Michigan, getting his master's as civil engineer at latter. He joined KVP Co. in 1933 and was Construction Mgr. on KVP Ltd's expansion recently at Espanola, Ont.

JOHN BENJAMIN BECK (left), Technical Director of Eastex. He was born in Canada, graduated from Univ. of Toronto. He was Supt. and Tech. Supervisor at The E. B. Eddy Co., Hull, Que., and more recently was Gen. Supt., Oregon Pulp & Paper Co., Salem, Ore.

LEONARD C. MENIUS (right), Personnel Director. He had served eight years in Industrial Relations at Union Bag & Paper Corp., Savannah. Born in Rowan County, N. C., he graduated from Davidson College and earned a master's (m.a.) at Univ. of North Carolina.

PURCHASING AND TRAFFIC . . . CLIFFORD R. BAKER (left), Purchasing Agent, was born just 6 mi. from the mill—in Silsbee. He had been Asst. P. A. at Columbia Southern Chemical Co., Lake St. Charles, La.

EDDIE R. COLLINS (right), Traffic Mgr. Born in Smithville, Tex., he also came from Lake St. Charles, where he was Traffic Mgr. of the Port.

ASSISTANT SUPTS . . . RALPH S. GRANT (left), Assistant Pulp Supt. He came to Eastex from Weyerhaeuser's Pulp Division in Longview, Wash.

CLYDE H. KOLB (right), Assistant Paper Mill Supt. As Tour Boss at Potlatch Forests Inc., Lewiston, Ida., he had worked under his chief at Eastex. Previously, Mr. Kolb also had been with International Paper in the South.

Indians, Spaniards, Oil—and now Pulp

Evadale, Tex., is making industrial history in a big way today. But its past is shrouded in dim fogs of history. It was founded back in the days when logs were rafted down the Neches River and there was a big log boom where the tiny Evadale village took shape.

Being only 24 miles up the Neches from Beaumont, and only 42 miles north of that river's outlet into Sabine Lake and the Gulf of Mexico, it is probable the Spanish conquistadores and LaSalle and his Frenchmen were hereabouts in their time. Four centuries ago, Attacapas Indians built lodges of animal skins on this river bank.

Just six miles across the river at Silsbee there is a new community on its eastern outskirts of pulp and paper mill workers. Back in 1893, John Henry Kirby chose Silsbee for one of his largest lumber mills. The Brooks field and other oil discoveries in 1936 and later gave Silsbee a big industrial boost. Many millions of gallons of oil and gas are being produced here. About the same time the Evadale mill was constructed, the Kirby Lumber Co. built a new $16,000,000 all-electric lumber mill, one of the world's biggest, at Silsbee, with a chip plant serving Eastex.

Nearest city to Evadale is Beaumont, with well over 100,000, a population doubled in 15 years. The Spanish, in their push eastward for gold, lay claim to the Indian village which stood here, not realizing they were walking over the richest "black gold" deposits anywhere in the world.

In 1837 American settlers named the town Beaumont. Then, on Jan. 10, 1901, the Austrian-born mining engineer, A. F. Lucas and his crew "heard a rumbling like a train" under marshes they were drilling and the Lucas Gusher erupted high into the Texas sky. Beaumont and quite a bit of world history changed that day. Petroleum wasn't new—but in such

fantastic quantities it was. The Lucas well ushered in Spindletop, the nation's first great oil field. It struck the sister cities of Beaumont and Port Arthur like a thunderclap—and they have never quite gotten over it.

CHIEF LIEUTENANTS heading up sales under Vice Pres. Clarke H. Morian Jr. are these two gentlemen: G. A. ROSCHEK (left), Eastern Mgr. of Sales, based in New York City, and DOUGLAS B. COWIE (right), Western Mgr. of Sales, with headquarters in Chicago. They head up sales of both the market pulp and the paperboard products of the mill.

PRODUCTION AND FINISHING . . . FARLEY M. BOWERS (left), in charge of Production Scheduling and Servicing at Eastex, is another who broke in at the famous old Cherry River mill in West Va. He was born at Richwood in that state. With the Kieckhefer organization and its North Carolina Pulp Co. in Plymouth, N. C., he worked in the mill and office. He had two years of school teaching, too, after leaving Glenville State College (West Va.).

J. W. ROBINSON (right), Finishing Room Supt. He reports to Paper Mill Supt. Dunn. Mr. Robinson came to Eastex from Bowaters Southern in Tennessee. Before that he was with Potlatch in Idaho and I.P. mills in the South.

CHEMISTRY AND WASTE . . . F. MARK ALLEN (left), Chief Chemist of Eastex. He came from St. Helens, Ore., where he had been on the staff of the mill now integrated into Crown Zellerbach Corp.

WILLIAM A. MOGGIO (right), Project Supervisor. His responsibility was supervising planning and construction of Eastex's $1,000,000 waste disposal system (fully described in May, 1955 PULP & PAPER). He was a specialist for eight years with the National Council for Stream Improvement.

HANDLING FINANCES . . . CLYDE E. COLE (left), Secretary-Treasurer and Controller, Eastex, came to this industry from University of Houston where he was Comptroller. Born in Hempstead, Tex., he is a Baylor University graduate and formerly was a public accountant.

F. R. WALLACE (right), Auditor, is another "man of figures" on the staff at Evadale who is a newcomer to the pulp and paper field.

POWER AND ELECTRICITY . . . JAMES G. LEE (left), Power Supervisor for Eastex. He had been with Combustion Engineering, Inc., whose recovery unit is at the Texas mill.

LEN P. BUNDY (right), Chief Electrician. He had come on the job of construction as part of the staff of the engineering firm, H. A. Simons, Ltd., and stayed on as an Eastex man.

MECHANICS AND INSTRUMENTS . . . R. L. PARET (left), Master Mechanic at Eastex. He had also been a Chief Draughtsman and was at Riegel Carolina Corp.'s new ClO_2 kraft pulp mill at Riegelville, N. C., was familiar with the process installed at Eastex.

HERBERT M. KENNEDY (right), Instrument Supervisor, which is a considerable assignment at the highly instrumented Evadale mill where 653 instruments are in use. He had been with Hollingsworth & Whitney in Mobile.

Why Special Field Report With Many Exclusive Pictures?

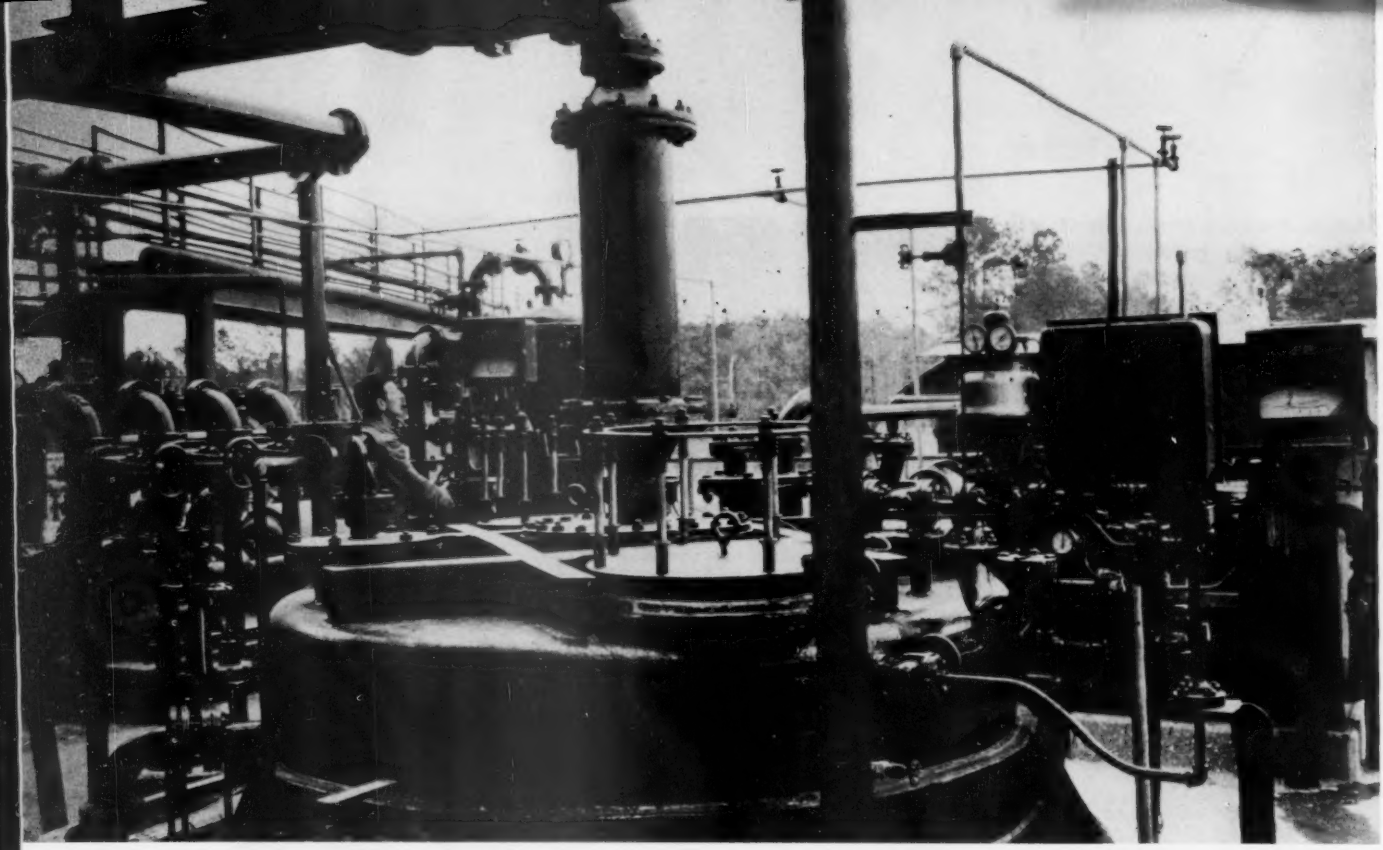
How this mill was built right from scratch has attracted much interest in this industry. For this is the first mill in all North America to be built from ground up by an entirely new company since the 1930's. Eastex could not call upon any parent firm—no affiliated firm—for research, engineering, records of past experience, or staff. It has to organize and create its own "know-how"—every bit of it. It had to reach out for personnel—it had no organization that could assign experts to build and run it.

Because of this unique situation, PULP & PAPER has gone "all out" to get Eastex's unusual story. PULP & PAPER editors made several visits to the mill gathering special material—also they took many exclusive photographs which accompany this article. Finally P&P's editor spent an entire week at Evadale winding up the editorial project.

Perhaps it is symbolic of the unusualness of this story that a 4-color picture of a Fourdrinier machine monopolized the cover page of annual report of an oil company last year. It was a picture of the Eastex machine, and report was Houston Oil's. That certainly made history.

SECRETARY AND SAFETY . . . MRS. MARY LEE PERKINS (left), Secretary to President Buckley of Eastex. The busiest person on the distaff side around Eastex since long before the startup. On the job almost since Mr. Buckley's arrival in Texas, she is No. 1 employe of the company.

GERALD MAGEE (right), Safety Supervisor at Eastex. Born in Rusk, Tex., a University of Houston graduate, he had been Safety Director for a construction firm in Houston.



WHERE CHLORINE DIOXIDE IS GENERATED . . . Olin Mathieson Chemical Corp., Industrial Chemicals Div., provided the design and engineering assistance for this plant just outside the mill. Reactors, Chemical Stoneware absorption towers, Ingersoll Rand refrigeration for chilled water, a Lundberg special design sulfur burner, are used to make ClO_2 from sodium chlorate, sulfuric acid and sulfur. Note Fischer & Porter control panels.

The Eastex Mill—"Stem to Stern"

Quality and cleanliness were watchwords in planning and building new Southern plant. Complete description by P & P

● On a level plain on the Neches River's east bank at Evadale, Tex., eyes of old settlers and farmers and oil field stragglers are still unaccustomed to the $28,000,000 reinforced concrete and steel structure plants of East Texas Pulp and Paper Co.

Forests of yellow pine surround the expansive mill site, with its 200 ft. high concrete stack, with 15 aircraft warning lights around the 12 ft. diameter top of it, and its 100 ft. high chemical recovery plant. Also its 960 ft. long Fourdrinier machine and finishing and shipping building.

A paved road running from the mill property main gate, alongside the administrative offices, splits the paper mill, paralleling it on the left, and the compact cluster of pulp mill units, recovery and plants on the right, but about 1,000 ft. distant from the gate. With so much open construction in the latter units, including the chlorine dioxide plant, they can be conveniently and quite adequately observed from the office windows of Vice Pres. "Buff" Natwick and Pulp Supt. Ray Brown in the administration building. (Incidentally, that road was trod many times by PULP & PAPER editors getting this story).

Any expansion decided upon by Eastex directors will be done without hardly changing a brick of present construction. Any unit can be expanded "in parallel." On one side of the 80 ft. wide by 750 ft. long paper and pulp drying mill (the machine also makes bleached market pulp) is an inexpensive temporary tile wall, which can be taken out in a matter of hours to add a second machine. The finishing room is another 210 ft. long, but 250 ft. wide. The towering stack of brick-lined concrete is 12 ft. in diameter, and already built to be able to serve more power and recovery capacity.

Daily ground water supply of up to 24,000,000 gals. comes from eight wells. It has a low content of solids and chlorides, making it readily adaptable to paper mill operations. Only treatment is with a small amount of chlorine.

These wells were engineered with consideration for hydrological conditions in the vicinity. After careful analysis of formations and water sands, it was decided to complete permanent wells at 1400-ft. depths. The wells are two miles or more away from the mill and there is no risk of undermining the mill. There is room for expansion as additional wells are needed.

PULPING AND BLEACHING

Chlorine Dioxide Is Feature

A compact single concrete structure, with lower areas open, incorporates digesters, brown stock washers, bleach plant and screen room. It is designed for a minimum of labor with bleaching, washing and digester control stations on a common floor at the top. A single light partition between the digester operating section and washers prevents dust contaminating washed pulp.

Of 13 tons capacity each are five 4,800 cu. ft. digesters supplied by Chicago Bridge & Iron, each 11 ft. 6 in. i.d. by 54 ft. high. They are fabricated from A-285 Grade B firebox steel with 2 in. thick shell and bottom cone and a 2 in. thick ellipsoidal top. Hasco angle valves are used for liquor filling. They are equipped with Yarway seatless blow valves and Cooper Alloy piping is used at bottoms of digesters. Each digester has individual instrument controls, usable either manually or automatically.

Circulating and indirect heating systems were by Electric Steel Foundry Co., Portland, Ore., and are all stainless steel. Heaters are of two-pass construction with expansion bellows in the shells to compensate for differential thermal expansion between tubes and other parts. There are about 28 strainer sections per digester completely encircling the internal circumference of the digester over one-third of the way up. Recirculated liquor is introduced at both top and bottom and withdrawn at the center. Piping is so designed that cooking may be done either directly or indirectly.

Chips are fed from a conveyor belt above digesters by means of a Chain Belt motor-operated tripper. A Ross Engineering exhaust system automatically draws off hot air during filling.

White and black liquor are fed to digesters through two 13,000 gal. measuring tanks on the roof. Relief gases pass through a Rosenblad (American Heat Reclaiming) turpentine recovery system. There is recovery of 1½ gal. of turpentine per ton of pulp, sold as a by-product to Crosby Chemical Co.

The blow tank is 26 ft. dia., 63 ft. high. Its gases pass through a Foster Wheeler heat recovery system—vertical direct contact jet condenser and a water accumulator tank.

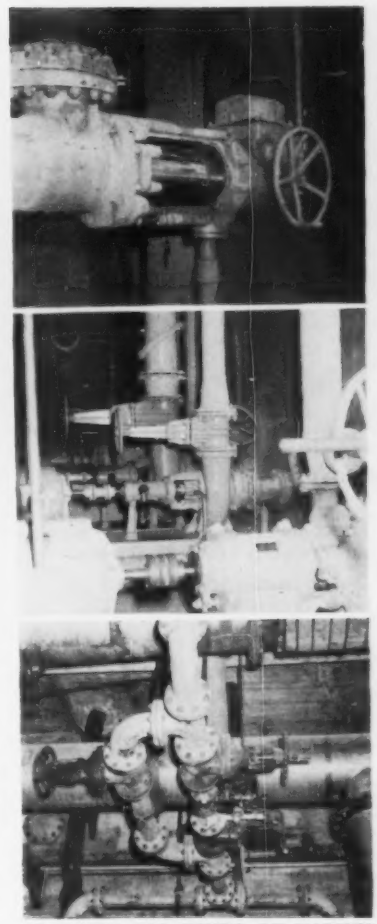
BROWN STOCK WASHING . . . The blow tank has a vertical agitator in its bottom and weak black liquor from brown stock washing is used to dilute the stock for pumping to three Bird Jonsson knotters immediately ahead of three Impco brown stock washers in line.

Knotters are mounted on Korfund vibration dampers. Rejects flow by gravity into a 13,000 gal. knot storage tank located in the basement, also storage for brown stock flat screen tailings. Knots and tailings are returned into digesters during liquor filling. Stock from the knotters flows by gravity into the brown stock washers. These have 9 ft. 6 in. diameter by 16 ft. face molds with submerged type intermediate re-pulpers.

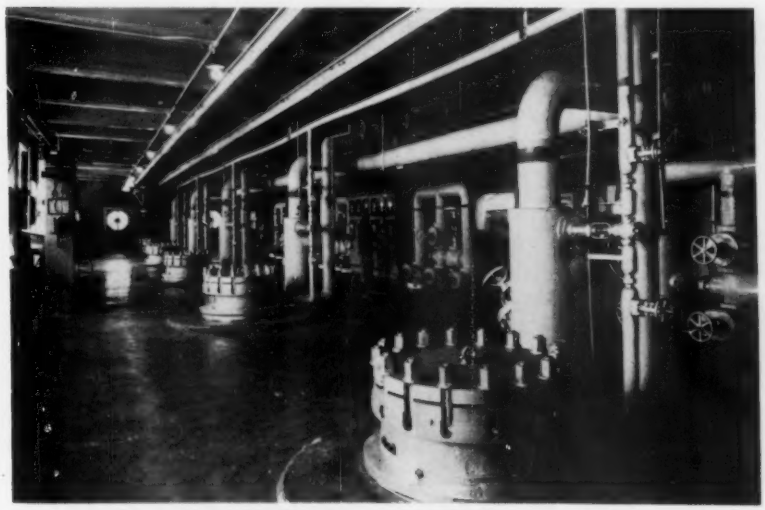
Washers are equipped with Reliance heavy duty variable speed d.c. 20 hp drives and Falk gears with a rheostat located at the washer panel. Washers and knotters are covered by a Ross steel and Transite hood and hot vapors are exhausted through the building roof. The washers are counter-current flow with the filtrate from each washer discharging into three seal tanks of about 120,000 gal. working volume. Foam is transferred to a 20 ft. dia. by 45 ft. high foam tank with Impco mechanical foam breaker.

Liquor from the foam tank is reinjected into the first stage filtrate tank and this liquor is pumped into two 190,000 gal. weak black liquor storage tanks.

A shredder conveyor combination discharges washed brown stock to a rubber belt which transports it to two 35-ton Chemical Linings tile high density storage tanks below the washers and equipped with Sandy Hill Kamyr tangential agitators. From here, stock is pumped to a blending tank 38 ft. dia. by 30 ft. high, equipped with a Bingham two-stage vertical agitator and designed to blend unbleached kraft at 3% consistency, thereby producing more uniform stock characteristics.



IT TAKES ALL KINDS OF VALVES . . . (top),—a Yarnall-Waring (Yarway) seatless blow valve on Eastex digester, with Cooper Alloy piping. Middle—Fabri-Valve wedge gate valves on high density bleach stock to screen room with Bingham pumps. There are about 100 Fabri-Valves, stainless and mild steel, in the mill. Bottom—Overhead view of some of many specialty DeZurik stainless valves used—these are for brown stock to bleach plant.



WHERE 5 DIGESTERS ARE OPERATED . . . These are 4,800 cu. ft. Chicago Bridge digesters with 2 in. firebox steel shell and 2 in. top. Hasco angle valves do liquor filling. Electric Steel Foundry provided circulating and indirect heating systems. Individual control panels are Taylor Instrument Co.

FOR SPECIAL PULP & PAPER FIELD REPORT on the woods operations for the new East Texas mill and also on how its wood is produced, handled and prepared for the pulp mill, see PULPWOOD SECTION, page 98.

CLOSEUP OF CHLORINE DIOXIDE BLEACH WASHER . . . this is 5th stage at Eastex. This Impco 8 x 14 ft. washer is stainless steel type 317, extra low carbon. Reliance V°S variable speed drive through Falk gear is shown. Stebbins made the tile vat and Ross provided the hood.

SIMPLIFIED OPERATION—Bleach washers (left), Brown stock washers (right) . . . with a common control panel at rear. There are five bleaching stages, with ClO_2 hooded washer at far left. On right are Bird Jonsson knotters and three stages of brown stock washing in series. Impco washers are 16 ft. face for brown stock, 14 ft. for bleached stock. Stebbins Engineering provided tile vats. Transite and steel hoods are by Ross Engineering. Reliance V°S variable speed drives through Falk reducers drive all washers.

FLAT SCREENING . . . Blended stock is pumped to eight rows of Impco Cypress vat flat screens. There are three flat screens in each row and each flat screen has 14 Union Screen plates via Chromium Corp. of America (.014 to .008 openings). There are four rows of primary screening, three rows of secondary and one row for tailings, which are discharged into a Chemical Linings tile-lined concrete chest with Shartle agitator chest before pumping back to the knot tank.

Accepted stock passes through Cypress flumes to an Impco 9 ft. 6 in. dia. by 16 ft. face vacuum type valveless decker, with a Reliance variable speed drive, for thickening stock to about 4% consistency. Stock then discharges directly into two concrete tile-lined decker chests, each holding about 10 tons, and equipped with Shartle propeller-type agitators.

BLEACHING IS 5 STAGES . . . Stock from decker chests can be pumped directly to a 5-stage bleach plant (chlorination, caustic, hypochlorite twice, and finally, chlorine dioxide). The bleach plant can be bypassed by pumping directly to bleach decker chests on the way to the paper mill.

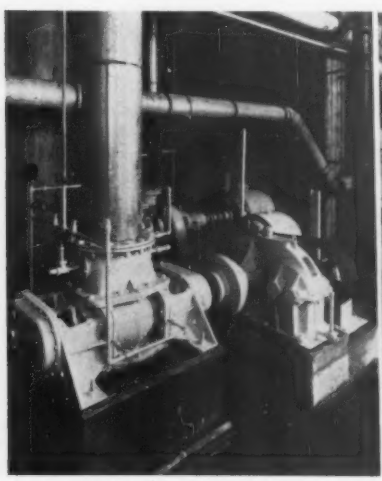
First bleach stage is the Sandy Hill Kamyr-design chlorination tower, 15 ft. i.d. by 70 ft. in height, fabricated from ⅜ in. steel plate, Stebbins tile lined with Asplit pointing. Being outside, it is insulated to cut down on differential expansion and prevent damage to lining by hot sunlight. From the tower, stock flows by gravity into the chlorination washer.

Impco supplied the five bleach washers—chlorination, rubber covered; caustic, cast iron; both hypochlorite, cast iron; chlorine dioxide, Type 317 stainless. Each is 8 ft. diameter by 14 ft. face. All but the $C10_2$ washer are open, with Ross fans pulling gases out at the side. The $C10_2$ stage has covering hood. All washers are equipped with Reliance V°S variable speed drives of 20 hp with Falk reducers. Bleach washer vats are of tile construction by Stebbins Engineering & Mfg. Co. All have centrifugal-type open discharge Semtile seal tanks to provide maximum separation of air and filtrate and full re-use of filtrate for dilution.

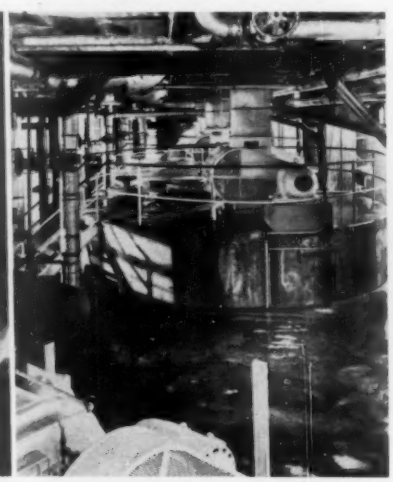
Stock from the chlorination washer discharges by gravity into an Impco mixer where caustic and steam are introduced. The caustic tower measures 18 ft. i.d. by 40 ft. high and is inside the building directly under the chlorination washer.

Third and fourth hypo stages also are inside with washers directly above towers.

CHLORINE DIOXIDE BLEACHING . . . The fifth bleaching stage is a high-density chlorine dioxide stage of Improved Machinery design. Stock is pumped at 16% ahead of the $C10_2$ stage and 13% in the $C10_2$ tower.



PRIME MOVER OF HIGH DENSITY (17% air dry) PULP is this Impco Type 316 solid stainless steel thick stock pump. It forces stock at 40 psi through a solid Hastelloy C chlorine dioxide mixer.

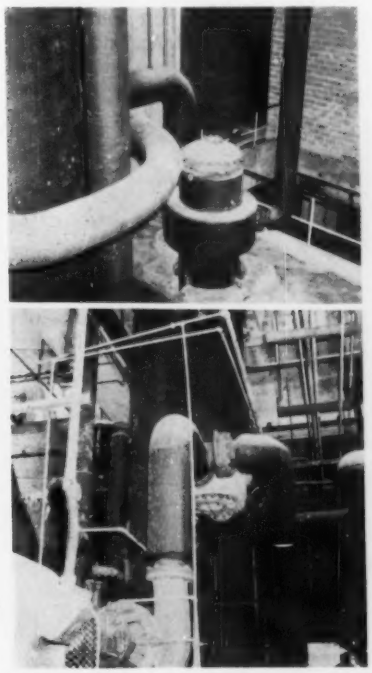


ESSENTIAL PART OF BLEACH PLANT are these Impco double shaft chemical mixers on top of downflow high density bleach towers.

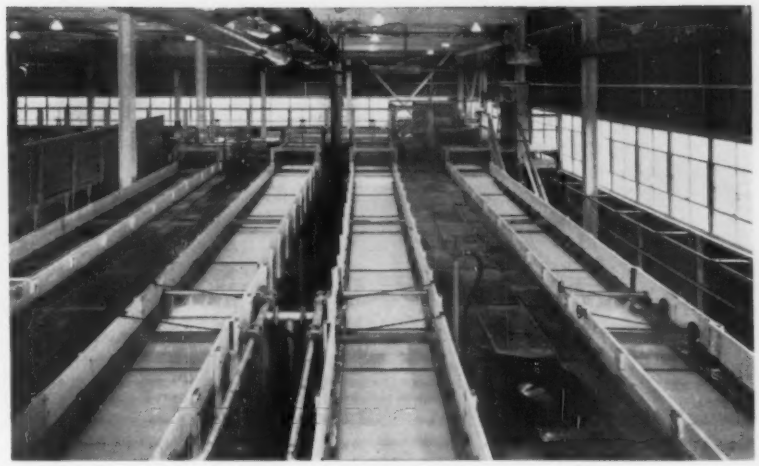
The top shower on the ClO_2 washer SO_2 is for color stabilization. Stock from the fourth washer discharges into an Impco double mixer for steam heating at the required temperature and discharges by gravity into an Impco Series 300 stock pump, which forces stock at about 40 psi through a Hastelloy C double shaft chlorine dioxide mixer. The stock is then pumped upward at approximately 12 to 14% consistency through a pre-retention pipe 4 ft. i.d. by 80 ft. high. This is discharged into an 18 ft. 6 in. dia. by 70 ft. high downward flow high-density tower outside the bleach plant. The pre-retention pipe and chlorine dioxide tower are lined with an acid brick with polyester pointing. Stock from the bottom of the chlorine dioxide stage is pumped back to the fifth washer. About 10 to 12 lbs. of ClO_2 per ton of pulp is used to obtain a brightness of 88 to 90.

Stock is transferred by a conveyor belt to two 35 ton Chemtile construction bleach high-density storage tanks. One is inside the building below the first stage washer, while the second is on a slab outside the building.

Ventilation for the pulping building was supplied by Ross Engineering. Exhaust gases from bleach towers and seal tanks are discharged into a 60 ft. high by 7 ft. dia. wood stave stack on top the flat screen building, thereby keeping waste gas from re-entering the building through the ventilation systems.



CIRCULATING SYSTEM FOR PULP COOK . . . Electric Steel Foundry supplied this circulating heater for Eastex. Top of heater which goes through the floor is shown above. The part of heater on lower floor is in lower view. Bingham pump is on lower floor.



BLEACHED PULP GETS FLAT SCREENED TWICE . . . Back to these Impco flat screens goes bleached pulp. Here are four rows, three primary and one tailings. Union Screen Plates via Chromium Corp. of America provide .012 to .008 openings. Control panel at right back.

FLAT SCREENS AFTER BLEACHING . . . Stock from bleach high-density storage is pumped back to the flat screen building, the bleach flat screens being in the same building as those for brown stock. There are four rows of Impco bleach flat screens, three primary rows and one tailings row. Union Screen plates via Chromium Corp. provide .012 to .008 openings. The accepted bleach stock passes through Cypress flumes to a 9 ft. 6 in. dia. by 16 ft. high vacuum type decker. The bleach flat screen headbox is equipped with a caustic rotometer for neutralizing SO_2 to control pH. Stock from the decker discharges directly into two concrete tile-lined chests, each holding about 10 tons of stock, and from here is pumped to raw stock storage outside the paper mill.

PIPING—OPEN CONDUIT . . . All piping in the pulp mill is open conduit. No lines are encased in concrete and all are quickly accessible for repair. There are literally thousands of feet of stainless steel used in the pulping and bleaching lines for stock and chemicals. Larger piping is by Strefco-Johns-Manville and Rovang and there is a myriad of small diameter stainless lines by Northwest Copper Co. Pumps are mostly Bingham, stainless steel. Scores of Fabri-Valves, mostly stainless, are used of various types—butterflies, check, wedge gate and bonnetless stock types. DeZurik three and four way stainless valves are used frequently for pulp mill stock and also Walworth and Crane valves.

"NOODLE" PULP . . . A specialty product at East Texas is a new type nodular, called "noodle," pulp, which is shipped to the nearby Orange Pulp & Paper Co. In this connection a Type 020 Jackson & Church press is used.

This is the first time a press was used to deliver pulp to a customer in the "noodle" form, and it is another first for the Orange mill, as it is supposed to be the first, or one of the first mills, to make kraft pulp in the United States.

HOW CHLORINE DIOXIDE IS GENERATED . . . The Olin Mathieson Chemical Corp., Industrial Chemicals Div., provided design and engineering assistance to Eastex in the layout and construction of its chlorine dioxide generating plant, which is located for maximum safety outside the screen room.

Sodium chlorate, sodium chloride, sulfuric acid and sulfur are the chemicals used. Sulfur is received in melted form, stored in a heated and insulated tank and circulated continuously through a head tank. Then it flows by gravity feed to a sulfur burner similar to one seen in Sweden by Vice Pres. Buff Natwick, when he made a European trip for new ideas before the mill was built. The sulfur burner was designed and built by Halvar Lundberg, Seattle, Wash., chemical engineer.

SO_2 goes through a spray cooler and then through a packed tower for further cooling. Draft is provided by a lead-lined fan. Part of the gas discharge goes through an SO_2 storage tower to make sulfurous acid, part through a water sealed blower filter to the ClO_2 generator. Fischer & Porter controls are used.

The reactor is lead-lined. Other equipment is Stebbins tile-lined. Gas generated in reactor passes through an absorption tower. There is another tower for SO_2 gas absorption used in color stabilization. These towers are stoneware, provided by Stebbins, where the gas is absorbed in chilled water at 36°F. The ClO_2 solution goes by gravity into a Stebbins tile-lined storage chest and is pumped to bleach plant. The water is from an Ingersoll-Rand steam jet refrigeration unit. Spent liquor from reactor is pumped to weak black liquor storage tank.

About 12 lbs of ClO_2 is used to a ton of pulp to attain a brightness of 88 to 90.

PAPER MILL—PULP DRYING

Coating—Some Innovations Here

Pulp drying, papermaking and stock preparation system is housed in the 740 ft. long machine room. Its operating floor is 19 ft. above ground level. This level gives maximum rigidity for the machine supports with reinforced concrete from foundation up to it. Above the operating floor is generally structural steel sheathed with Transite walls and precast concrete slab roof.

Storage tanks outside the stock preparation section supply hardwood, softwood or mixed sulfate pulps, broke, size and alum to the four tile mixing chests operated on a platform ahead of the Beloit machine. To these chests, inside tanks supply dyes and starch. A Fischer & Porter panel controls blending. The raw sulfate stock tank, 38 ft. diameter by 38 ft. high, and most tile lining in the machine room are supplied by Chemical Linings, Inc. The tile mixing chests receive these materials through an automatic proportioning system, utilizing Shartle Bros. control valves and Niagara Flow meters. Mixing Equipment Co. Lightnin' mixers serve the mixing chests. These mix chests are fitted with Shartle agitators and dump valves, and after a 25-min. cycle of dumping, filling and mixing, the stock is dumped into a tile-lined dump chest immediately below.

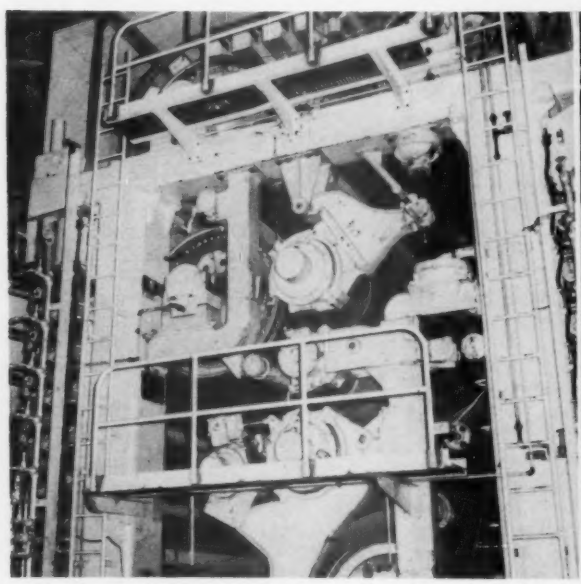
SPECIAL JORDANS IN USE . . . From here the stock is pumped continuously to three E. D. Jones & Sons Co. Majestic lava-filled jordans. The lava jordans give a desirable stiffness for milk bottle stock and other board grades. This idea was brought to Eastex by Vice Pres. Buff Natwick after he had seen similar jordans in use at Merriton, Ont., preparing stock for glassine.

Operators say the lava jordans "give something different—or less than—cutting" and with hydration. These jordans replace a normal stock preparation beater and discharge into a beater chest immediately below. Some of the stock flow, the machine wet broke and white water are circulated from this chest through an Impco 9 ft. 6 in. by 16 ft. saveall, which discharges back to the same beater chest.

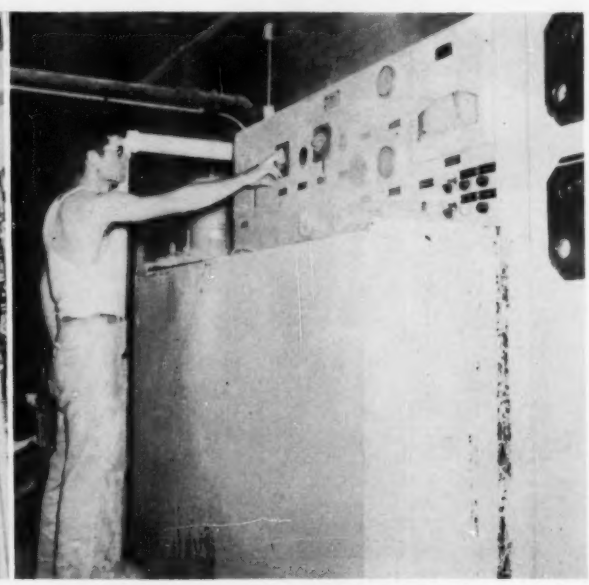
From the chest, stock flows through five more E. D. Jones Majestic jordans but standard steel filled instead of lava-filled. Three are provided with wide tackle and two with narrow tackle. All jordans have spherical roller bearings, Nowave filling and new Jones Fulbar shell filling construction. All jordans are driven by 400 hp 2300 volt 3 phase 360 rpm Westinghouse synchronous motors. These last jordans discharge into the machine chest.

THE ALL-PURPOSE MACHINE . . . Pulp is run on the Beloit 216 in. general purpose machine at around 150 to 200 fpm on paperboard, 360 lb. to 100 lb. stock is run from 300 to 900 fpm. On lighter grades the machine can be run up to about 1500 fpm.

A Northwest Copper Co. stainless steel stuff box with DeZurik valve and Tri-Clover Zephyrweld pipings is ahead of the machine. Salient features of this machine are in this order: Cross flow pressure air-cushioned Beloit inlet with rectifying rolls, 59 ft. long Fourdrinier, 42 in. dia. couch, 34 in. dia. rubber-covered bottom suction and granite top first press, an inverted second press with plain rolls (Stowe-Woodward and Manhattan covered these rolls), 6-drum predryer section, third press, smoothing press, 20-drum dryer section, breaker stack, 22-drum dryer section, size press 11-drum dryer section, 2 calender stacks fitted with 3 inter-calender dryer drums, 88 in. reel, and 60 in. dia. sets from the winder.



WHERE COATING IS DONE . . . Between two calender stacks on Fourdrinier is Faeber vertical coating installation. At top are two 60 in. dryer rolls and below are the coating group, which include inner gate and outer gate roll, application and oscillating distribution rolls. It applies principle of printing. Manhattan Rubber Co. covered the coating rolls.



NO GUESSWORK IN THIS STARCH COOK . . . Complete control of this big Henry Pratt Hygelator brings the starch out automatically with correct viscosity and other values required. East Texas put in biggest of these new machines.

There are 78 dryers including felt dryers. A Mt. Hope expander roll after the calender stock evens out the sheet. The dryer section is equipped with 4 top felt dryers, 4 top Feeney dryers, 3 bottom felt dryers and 4 bottom Feeney dryers.

The Worthington fan pump is 20,000 gpm, 45 ft. head, a 300 hp, 514 rpm unit.

Included with the machine are Rotoreaed vacuum for removal of water with separators at top; Bingham stock pumps generally for stock are driven by Westinghouse motors. Bowser lubrication, and Midwest-Fulton dryer drainage and Roots-Connersville vacuum pumps are used. Most bearings are SKF.

The machine is driven by a 1500 hp 7028 rpm General Electric mechanical drive turbine on line shaft exhausting steam to the dryer sections. Each machine drive section is driven through the Beloit differential drive.

Strefco-Johns-Manville, and Northwest Copper and Rovang piping is used for stock and water lines. Numerous Fabri-valves are used, the wedge-gate type on pump section and discharge and bonnetless stock valves on broken lines, beater chests and jordan dumping. Also DeZurik 3- and 4-way stainless valves. All piping is stainless where touched by stock.

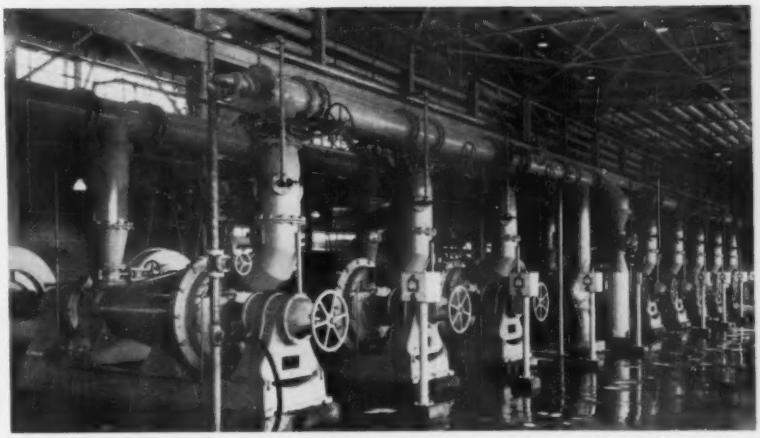
J. O. Ross Engineering supplied a Transite removable sectional machine hood, the Grewin system, room ventilation and calender cooling.

Machine instruments are General Electric, Taylor and Honeywell, Foxboro for press roll loading, Mason-Neilan for dryer steam. Bird Vickery felt conditioners are used on three felts.

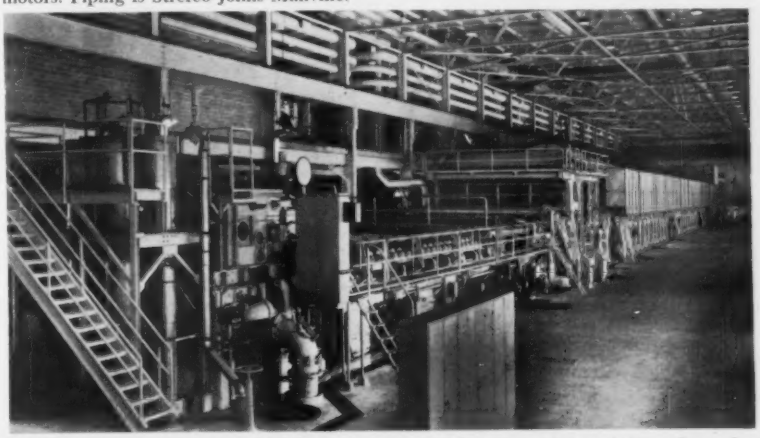
The machine is serviced by a Shepard Niles 59 ft. span traveling crane, fitted with two 18-ton trolleys.

Bottom felt dryers were located high enough so that continuous passage for collecting broke is provided in the basement. The three dryer sections are separated by a breaker stack and a size press where starch up to 12% or other coating slurries can be added.

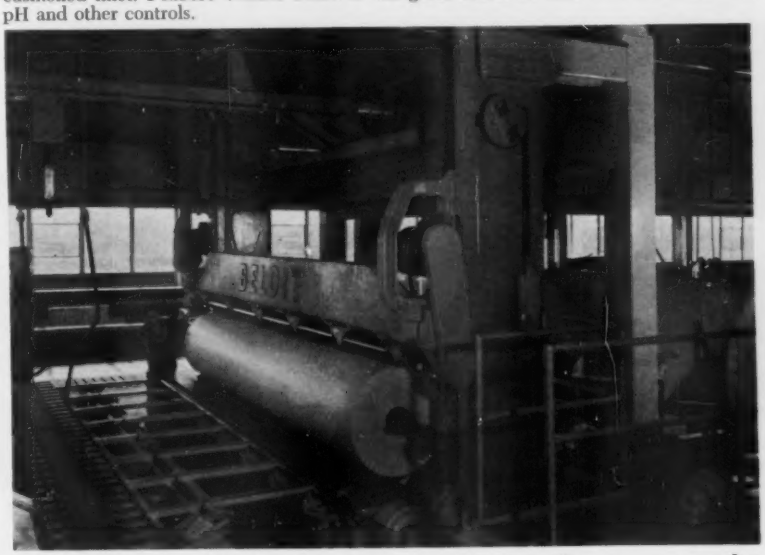
COATING BETWEEN CALENDERS . . . A general purpose Faeber vertical type coater is also located between the two calender stacks along with the inter-calender dryers. The two dryer rolls are at top, and below them, coating application roll, oscillating roll to distribute coating, and inner gate and outer gate rolls. Manhattan covered these coating rolls. The Faeber coating installation employs the principle of ink distribution in the printing industry. The gate rolls are



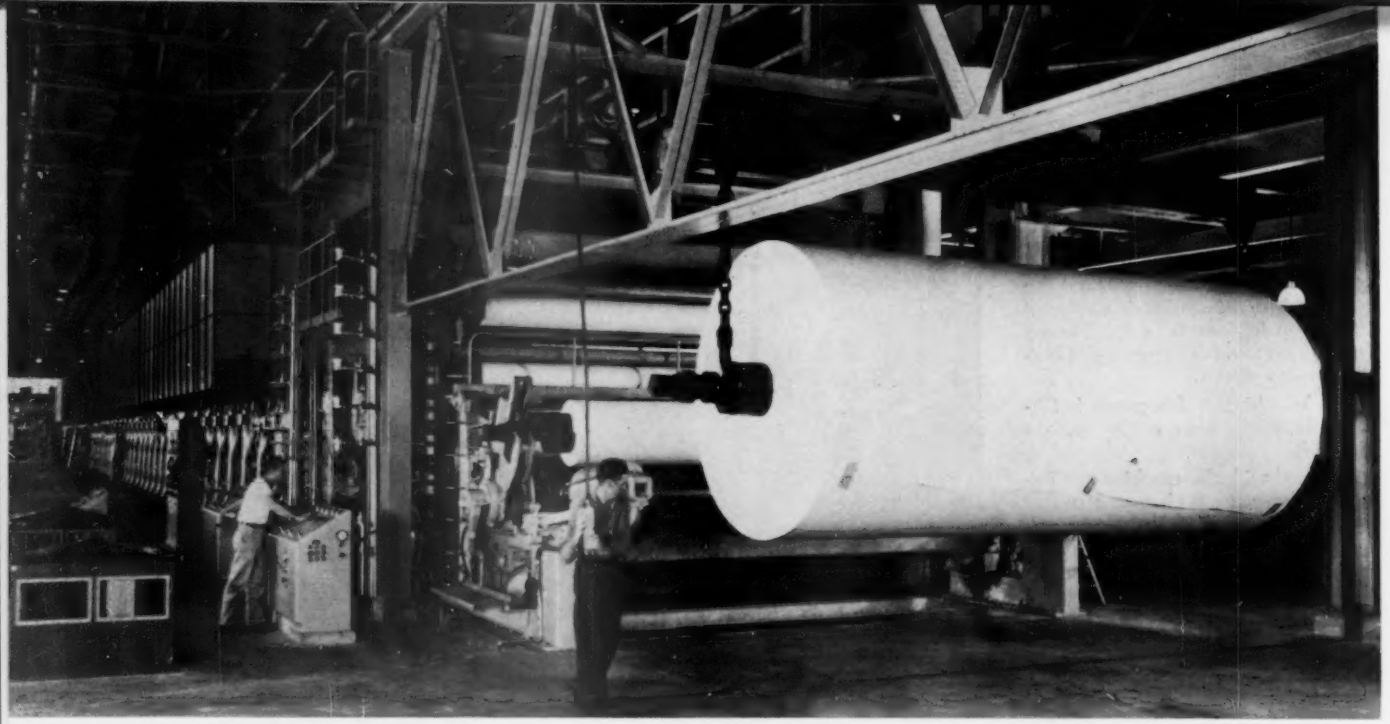
LAVA-FILLED JORDANS "GIVE SOMETHING" . . . There are eight E. D. Jones & Sons Majestic jordans at Eastex and the first three lava-filled were a special idea of Vice Pres. Buff Natwick for desirable stock stiffness. These are followed by five Jones standard steel-filled jordans. Jordans are driven by 400 hp. 360 rpm Westinghouse motors. Piping is Strefco-Johns-Manville.



SPEED RANGE UP TO 1,500 FPM . . . But much slower when making pulp is this 216-in. Beloit all purpose machine. In background are Jones jordans. Northwest Copper Co. stainless steel stuff-box with specialty DeZurik valves is just above Beloit air-cushioned inlet. Foxboro control board is alongside headbox. Also here are Beckman pH and other controls.



OPERATION AT MACHINE DRY END . . . Beloit core pulling conveyor transfers set of rolls from Beloit Model M Winder and Slitter to a Beloit Levelator, which lowers roll set to floor for wrapping.



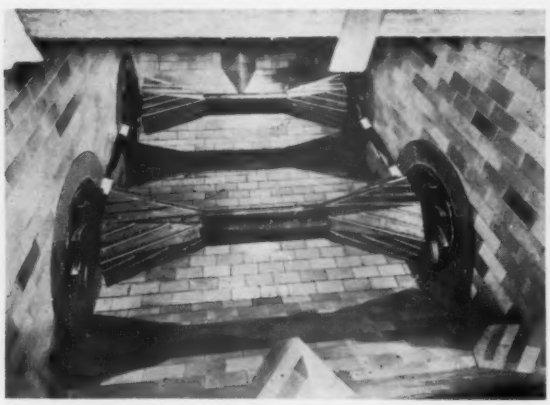
PRESS A BUTTON TO MOVE ROLLS UP TO 10,000 LBS. . . . Dry end of Beloit Fourdrinier at Eastex. Shepard Niles bridge crane transfers reel to Beloit Model M winder. General Electric console board is alongside two calender stacks, with coating operation between them. Sectional paneled hood is by Ross Engineering.

metering rolls. The top dryer rolls are 60 in. dia., outer gate is 24 in., inner gate is 34 in., oscillating roll is 24 in., application roll 34 in. Hot air through a plenum rapidly dries the evenly distributed coating.

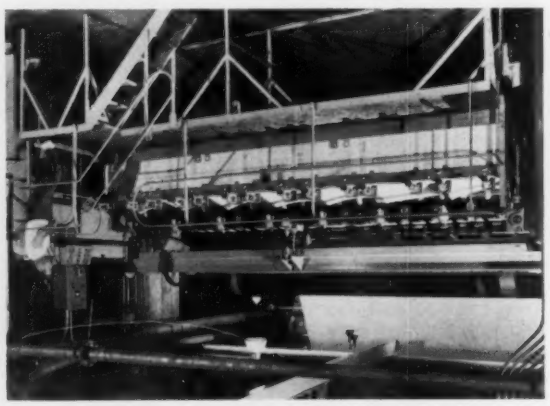
SYSTEM FOR PREPARING COATINGS . . . In an anteroom in the machine room basement is new automatic equipment for preparing coating slurries for use at the size press and calender coaters. The human element—risk of wrong mixture or cooking—is eliminated and fingertip controls provided. This system follows naturally into two parts. The first is for the preparation and cooking of starch by use of 3,500 gal. batch cooking and storage tanks, with vertical agitators, steam admission and Moyno discharge pumps. This starch can also be cooked continuously in preparation for size press application in a Henry Pratt Hygelator, made in collaboration with Penick & Ford. This was the biggest and one of first machines of its kind, of 250 tons capacity, all stainless steel. Starch and water are used and the starch automatically comes out with correct viscosity and other values.

The second section is composed of mixing equipment for clay slurry and adhesives, by means of Mixing Equipment Co. Lightnin' stainless steel mixers, blending tank and vibrating screens of 200 mesh. The resulting clay and starch coating can be further mixed and diluted as required for use on the size press or coater. Cooper Alloy valves and Westinghouse chemical motors are used here.

A NEW TYPE BROKE CHEST . . . Many mills have difficulties handling dry broke at the calender and reel, especially during starting. Mr. Natwick came up with an idea to eliminate labor by replacing the usual broke beater with a 216 in. wide chest of his design located between the calender foundations extending from the dryer pit to the reel slot and flush with the basement floor. This chest is Stebbins Semtile lined concrete except for steel panels above the liquid line on the ends. At the dryer end, a 4 ft. conveyor transfers broke from the floor beneath the dryer into this chest. This chest is fitted with a double-rotor 16 ft. long E. D. Jones & Sons conical-shaped No. 4 Pulpmaster. Both rotors are equipped with perforated grates at ends for continuous stock extraction. The Pulpmaster has, when neces-



IMPROVED WAY TO HANDLE DRY BROKE . . . Vice Pres. Buff Natwick devised scheme for an unusual 216 in. diameter broke chest between calender foundations extending from dryer pit to reel slot and flush with floor. This is fitted with double rotor E. D. Jones & Sons conical shaped No. 4 Pulpmaster.

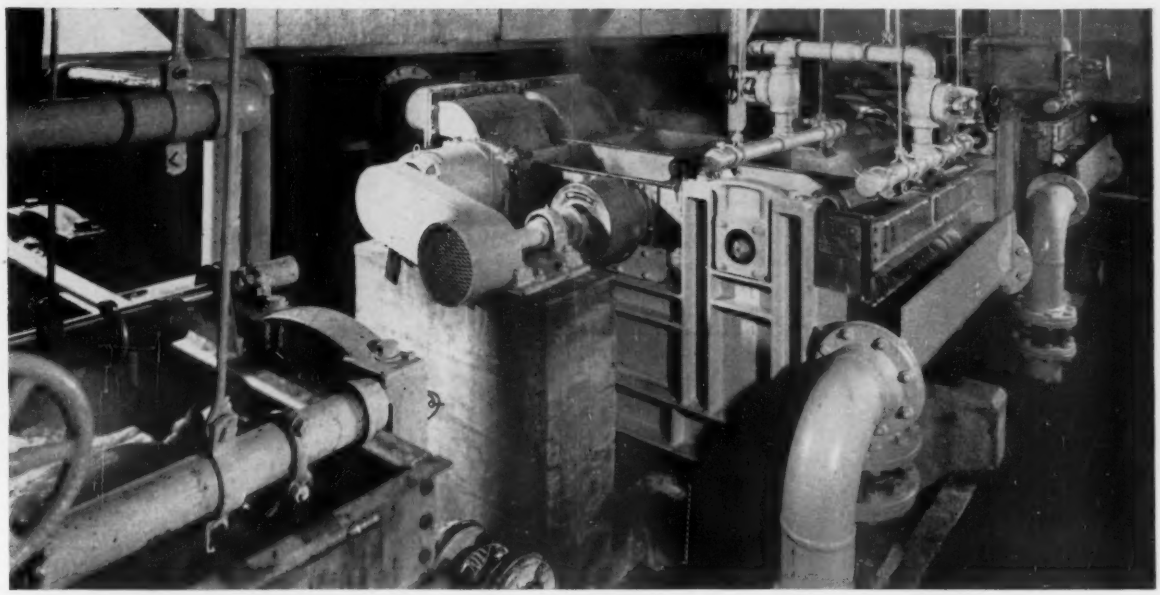


A WHOPPER OF A PULP CUTTER . . . This Lamb Grays Harbor 210 in. pulp cutter is believed the biggest in the business. It is cutting 7 pulp sheets by width here for Eastex. . . This is chlorine dioxide bleached kraft pulp in 30 in. sheets. Westinghouse control buttons are at right.

BIRD JONSSON SCREENS at EAST TEXAS

These three Jonsson Screens are delivering three hundred tons of bleached kraft per day to the washers. The stock is free of knots; washing efficiency is increased; better, more uniform vacuum is constantly maintained.

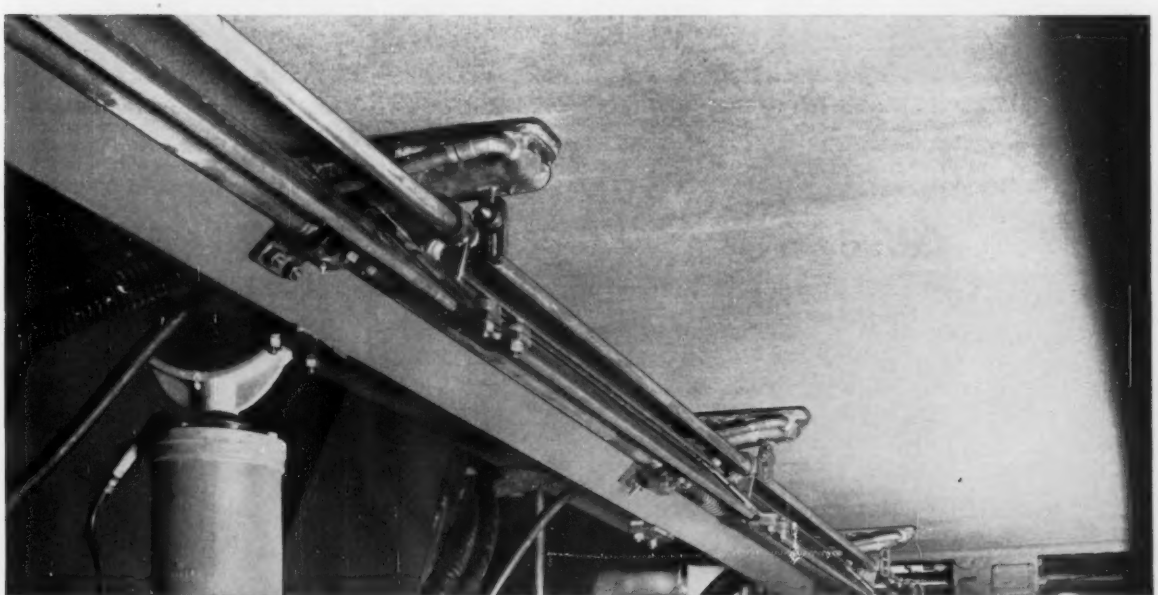
Ask us to mail you the Jonsson Screen Bulletin.



VICKERY FELT CONDITIONERS at EAST TEXAS

Here is one of three Conditioners on the paper machine press felts at this great, modern mill. These big 224" felts have a designed speed of 1500 feet per minute. The Vickery Felt Conditioners are equipped with "Jordan" type vacuum boxes and high speed gear boxes to keep every inch of the felts continuously clean and open right through the week without midweek shutdowns or slowdowns.

Ask us to mail you the Vickery Felt Conditioner Bulletin.



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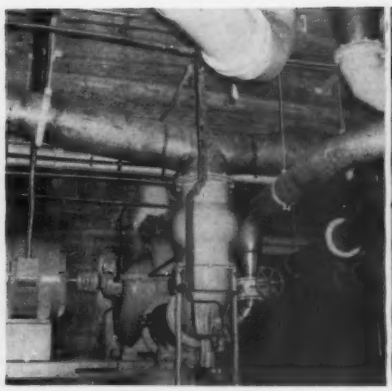
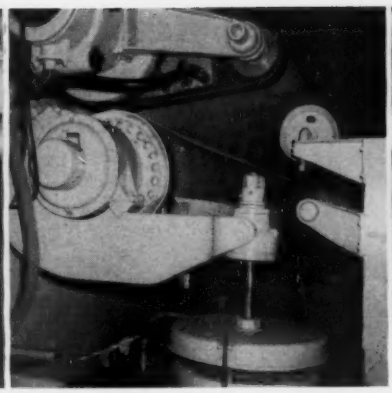
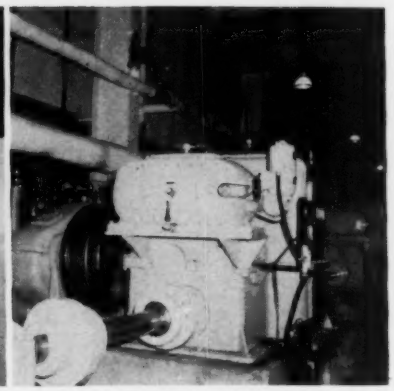


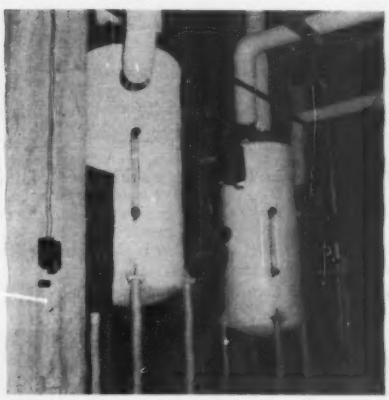
20,000 GPM FOR MACHINE . . . At Eastex, this Worthington fan pump has 45 ft. head. Maze of piping includes Strefco-Johns-Manville pipe (highest in picture) and Northwest Copper Co. stainless steel fabrication.



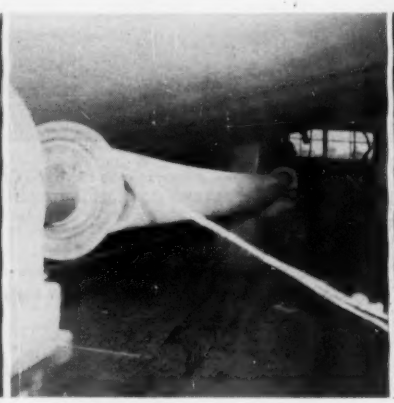
INVERSE PRESS . . . This Stowe Woodward Microrok roll is part of press section on 216 in. machine at Eastex.



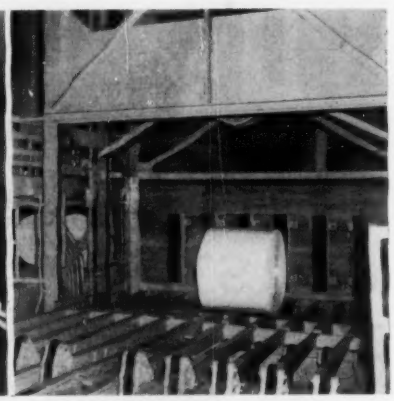
VARIABLE SPEED FOR EACH SECTION . . . On the Beloit machine drive side are these Link-Belt PIV units with Beloit gear and couplings and Westinghouse motors.



DRAINAGE SYSTEM . . . Ross-Midwest Fulton system is used. Mason Neilan regulating units are in black boxes.

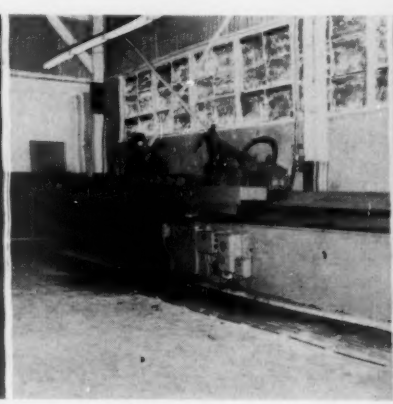


EXPANDER ROLL . . . Part of equipment on the Beloit machine at Eastex, shown here without paper on it, but indicates wrinkle-straightening results by its shape. This is between calender stacks and below the coating unit.

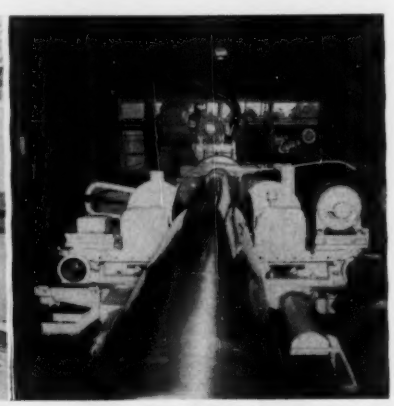


CAN LOWER 640 ROLLS IN 8 HRS . . . This Link-Belt Lowerator speeds up finishing. Only one roll on it permits seeing mechanism. It takes rolls to basement and storage after they go through header and wrapper.

LOADS TWO 500-TON BALES AT A TIME . . . One-ton Conveyor lift picks up two bales of Eastex market pulp at once from conveyor and loads them onto this Clark lift truck, which takes its load to storage.

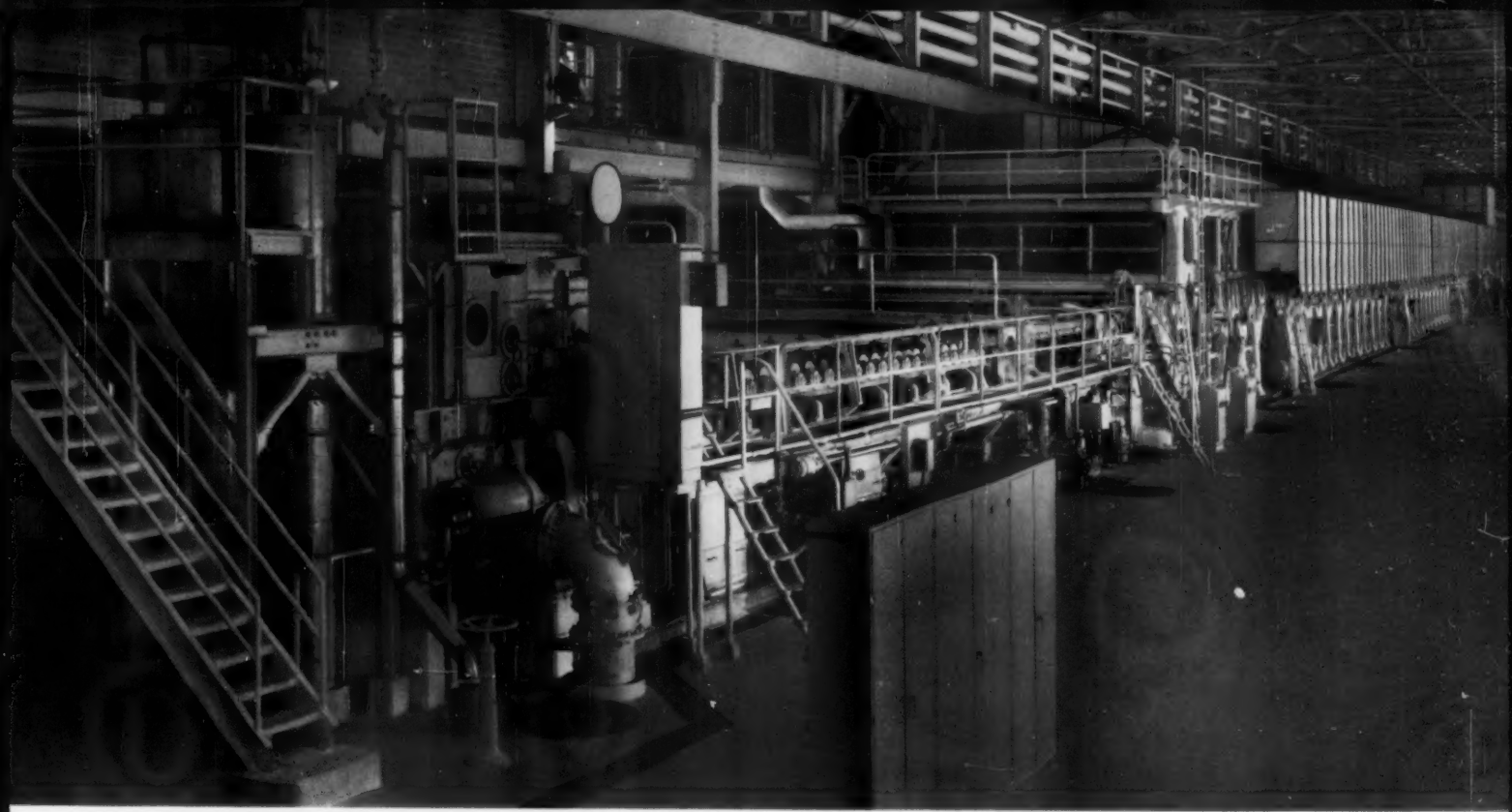


SHARPENING KNIVES . . . Hanchett knife grinder is busy here keeping equipment in shape at Eastex.



GRINDING A MACHINE ROLL . . . Lobdell roll grinder at Eastex is on a special mounting of 170 tons of concrete supported by Korfund vibration isolators.

Pictures by PULP & PAPER



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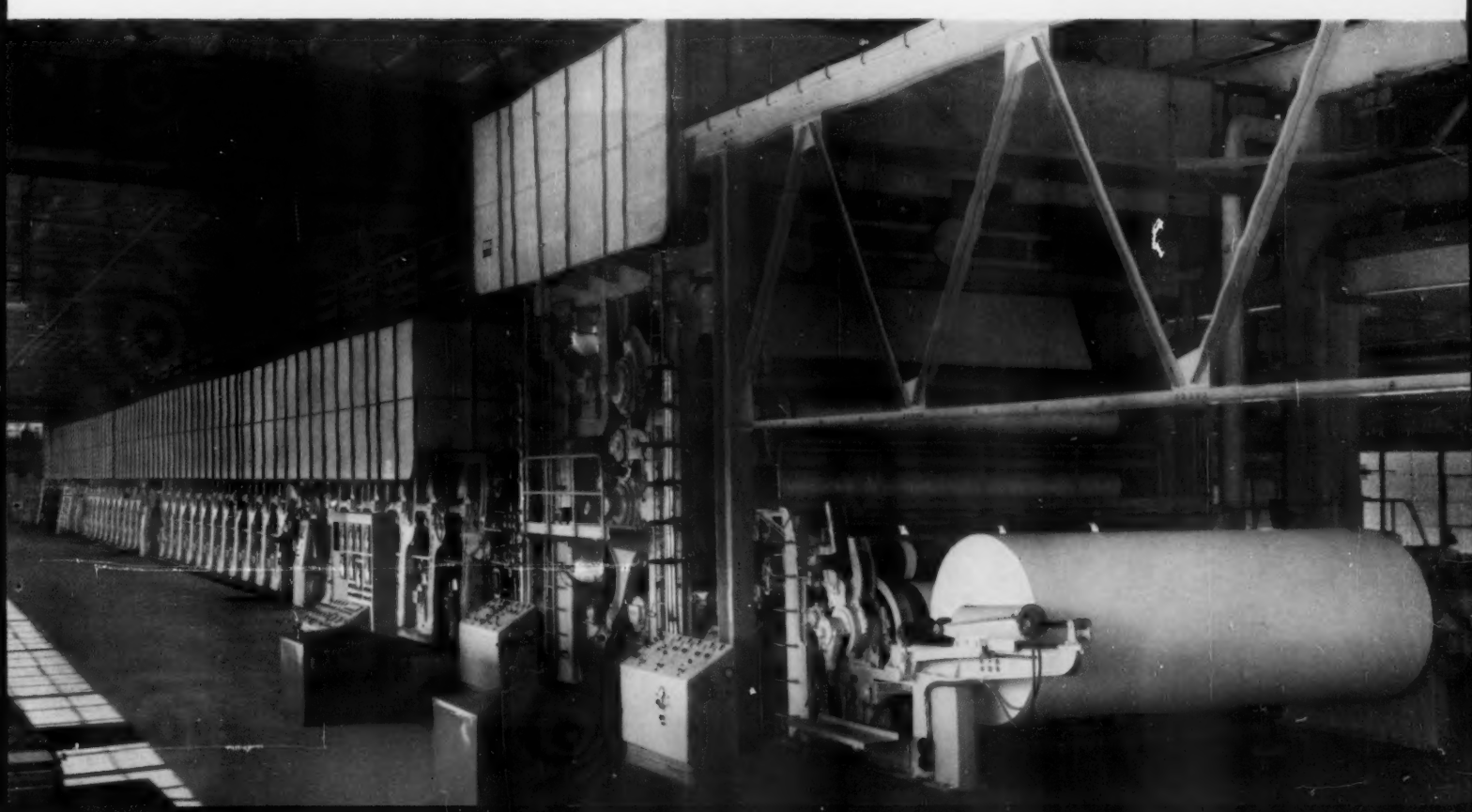

at East Texas Pulp & Paper Co., in the Bleach Plant and the Chemical Plant,

WHERE CORROSION IS Really TOUGH

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sary, run 12½ tons an hour. It has never failed to take all the broke they wanted to put in.

Any tendency for the dry broke to float is eliminated by the use of heavy broke sprays recirculated from the extraction pumps. Any wet broke drops through presses to carts and is dumped on a belt to the beater. This system permits the repulping of the full machine capacity without the use of labor, apart from what is required to clean up the basement floor below the dryers. Unlike many broke beater areas, it is one of the cleanest places in the mill.

In the machine room basement, next to the warehouse, a 294 in. face Lobdell Co. roll grinder is specially mounted on 170 tons of concrete supported by Korfund vibration isolators, to absorb any shock from a dropping roll in the mill.

FINISHING PULP . . . From the calenders, the sheet may be reeled for further roll finishing. When making pulp, the sheet is carried over the reel through a floor slot directly to a Lamb-Grays Harbor 210 in. pulp cutter and automatic layboy and conveying system. This is the widest pulp cutter ever built—7 pulp sheets wide (30 in. sheets). An 850-ton Washington Iron Works baling press services this baling line. An Oval strapping machine does the wire tying. A small Moore dry kiln is provided for pulp moisture testing alongside the baling line. A one-ton Conveyor lift picks up two 500 lb. pulp bales and puts them on Clark lift trucks which carry them to storage or r.r. cars.

FINISHING PAPERBOARD . . . When making board, a separate 16-ton Shepard Niles bridge crane transfers the reel to the Beloit Model M winder. The Beloit core-pulling conveyor transfers the set of rolls to a Beloit Levelator, which lowers the roll set to the floor. The finishing line equipment at floor level, automatic gluing, wrapper rolls, with overhead back stand and header, are supplied by Lamb-Grays Harbor. A Cameron No. 14 rewinder is also provided, which is 94 in. wide for use on board.

Provision is made in the 84 in. header so that it can be opened out to 12 ft. to allow 10 ft. rolls to by-pass the roll wrapper system. The Link-Belt lowerator in this wrapping line is also large enough to handle these 5 ft. dia. by 10 ft. long rolls. It can lower up to 640 rolls per 8 hrs. from upper to lower floor, a drop of 15½ ft. It handles rolls from 24 to 60 in. diameter and 3 to 10 ft. long, from 520 to 10,800 lbs., and is fully automatic, as long as rolls are fed to loading position. These discharge to the 200 x 260 ft. warehouse and are taken to the 120 in. Moore and White Co. duplex rotary cutter and layboy. This is used for tag papers, carton stock etc.

Near this cutter, located in the warehouse, an 85 in. Seybold hydraulic trimmer prepares the stock before going to the sorting and wrapping benches. Pallets and Clark bayonet-fork lift trucks are used in storage and shipping of paperboard. For tagboard, 16 bales can be handled on a pallet.

At the dry end of the machine is this sign: "Remember the customer will be next inspector."

RECOVERY AND POWER

Grouping Aids Operation

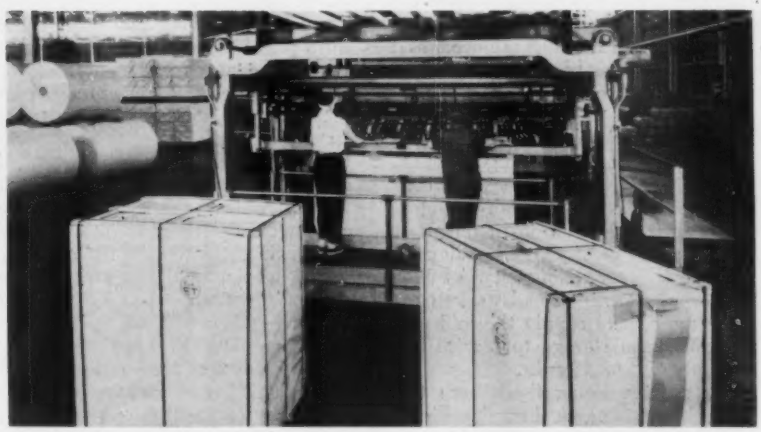
Recovery unit, evaporators and power plant have been grouped together for greater ease of operation. Evaporators are entirely outdoors, while the recovery and power boilers are semi-outdoors. Operating floors are concrete, the side of the boiler and all intermediate floors are grating. An elevator services the six floors of the recovery building.

Weak black liquor, pumped over from washing, is sent to the Goslin Birmingham sextuple effect evaporators. The first effect is in two passes to promote heat transfer. Weak liquor feed is divided between the 5th and 6th effects, pumped from each to the 4th, from 4th to the soap reclaiming tank. Liquor is then pumped to the 3rd effect, then from 3rd to 2nd then to 1B effect and 1A, from where it is passed to a flash tank where sensible heat in product liquor is recovered and utilized to increase evaporation. Stainless steel tubes are in 1A and 1B; the rest are carbon steel.

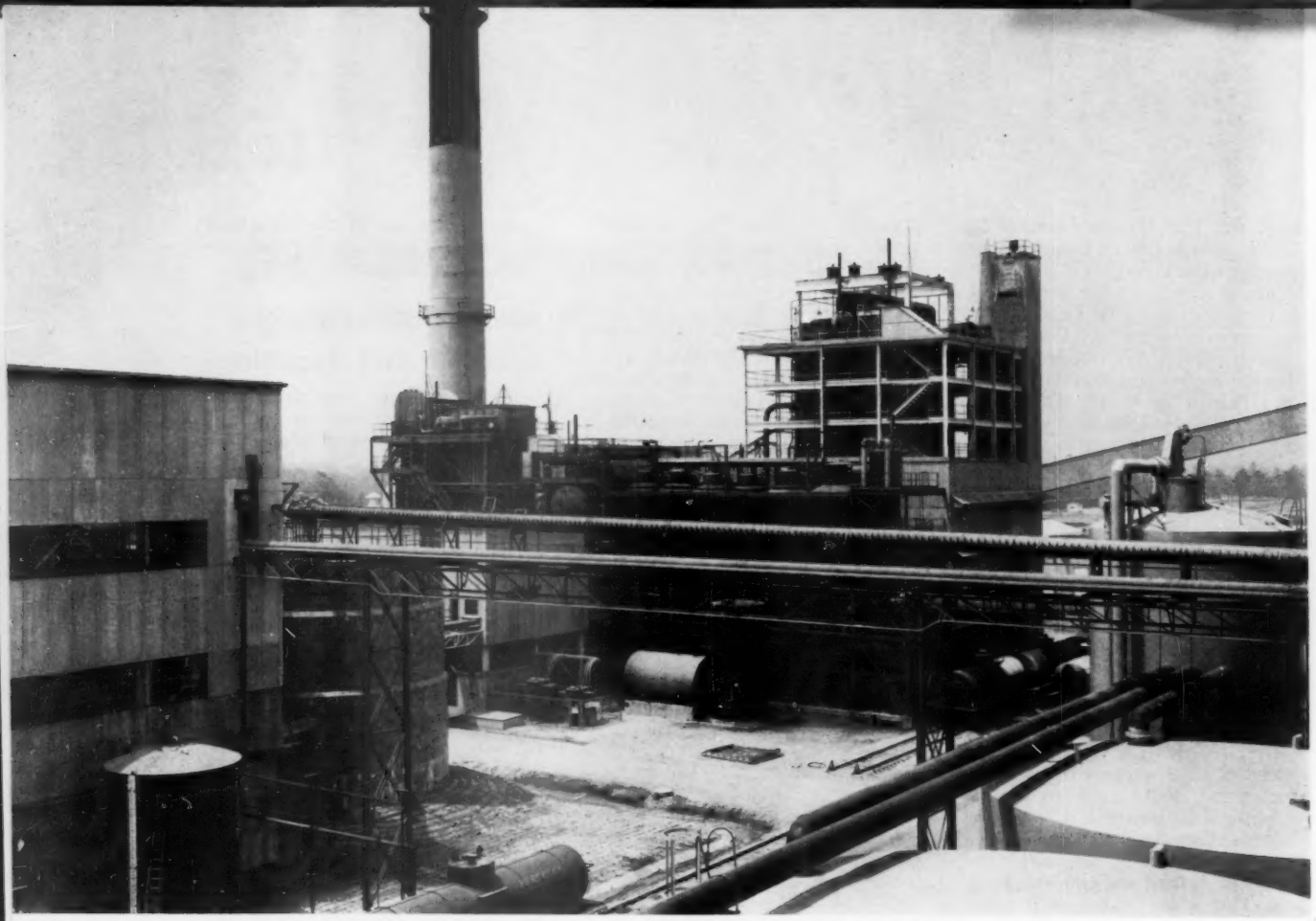
Initial evaporator design was 170,000 pph evaporation with feed at 15% total solids. Concentrated liquor design is 50% total solids. When operating at 40 lbs. design steam pressure, evaporators can exceed design rate by 20%. Worthington alloy centrifugal pumps transfer liquor between effects and concentrated liquor from flash tank to storage.

NEXT—TO PRECIPITATOR . . . Following concentration in evaporators,

EASTEX BLEACHED KRAFT PULP OFF PRODUCTION LINE . . . Washington Iron Works heavy duty baling press in background, Toledo scale, in back, too. Oval strapping machine tying wire and Lamb Grays Harbor conveyor with automatic "fingers" and contact switches do an amazing job of getting pulp off to storage or to customers.



FOR TAG PAPER . . . THIS IS THE TICKET . . . This 120-in. Moore & White duplex rotary cutter and layboy at Eastex has a 12-roll revolving backstand. Sheeter-skids of Eastex bleached board are in foreground. Two inspectors are at machine. In back (left) are rolls waiting to be sheeted and bales of bleached kraft pulp.



POWER AND RECOVERY TOGETHER . . . Goslin Birmingham sextuple effect evaporators are dark structures in middle of picture. Ten-story high 850,000 lbs. solids per day Combustion Engineering recovery plant is shown. Custodis 200 ft. high stack and Koppers precipitator at left. Impco foam breaker is highest light colored tank at right. Lower tanks on this side of it are filtrate tanks for brown stock washing.

black liquor is pumped to a Koppers dry bottom twin chamber electrostatic precipitator, where salts are recovered.

Liquor then passes through an ash tank into a Murray cascade two wheel evaporator, each 14 ft. dia. and 8 ft. wide.

The precipitator is capable of handling 130,000 cfm of flue gas at 300° F. Twin chambers allow by-passing and are a safety measure. Each chamber consists of two essential units; the precipitation chamber where the gas is cleaned and the dust removed, and an electrical unit to supply high voltage direct current. The induced draft fan is unusual in that it is after the precipitator to keep from getting out of balance. Gases from fan go to stack. Black liquor leaves at 68% solids concentration, passing through a motor-driven rotating cylindrical strainer. It then flows by gravity into the salt cake and black liquor mixing tank. A Fuller Airveyor system unloads salt cake from r.r. cars to supply the mill and reclaims from storage to service bin at a rate of 8 tons per hr.

By gravity, liquor flows from the salt cake mixing tank through a direct contact steam heater to a Worthington centrifugal alloy pump in the basement. The pump sends concentrated liquor through another direct contact steam heater to the header, which supplies six liquor spray guns, three on each side, which inject liquor into the Combustion Engineering recovery boiler's furnace.

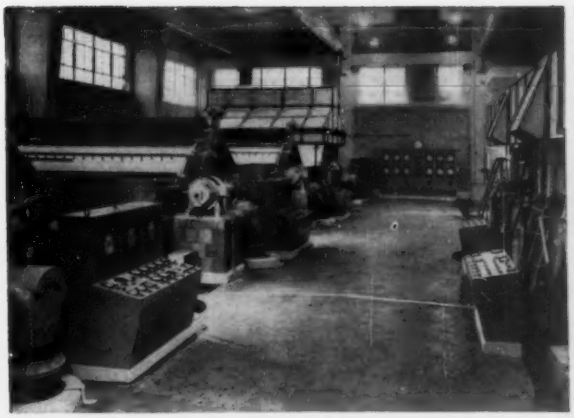
For every pound of dry solid fuel introduced to the furnace, about one half is ash and leaves the furnace as smelt.

DESIGN FOR BOILER . . . The C. E. boiler is a conventional three-drum design having two passes. The third pass houses a 4-row finned tube integral economizer. Hoppers at the turn of the first and second boiler pass pick up entrained ash that separates from the gas stream through centrifugal action. Hoppers are washed down with liquor from the ash tank which permits the return of ash to the ash tank and ultimately into the cascade evaporator and the furnace.

The maximum design steam pressure of the Combustion Engineering recovery unit is 675 psi, operating at 625 psi and 700° F. at the superheater outlet. Feedwater temperature is 350° F. The unit has an average predicted steam flow of 132,000 pph when operating at guaranteed capacity of 900,000 lbs. of dry solids per 24 hrs. But it has produced as high as 175,000 pph.

POWER BOILER BURNS GAS AND BARK . . . A Babcock & Wilcox power boiler, capable of burning waste bark and natural gas, is design to provide the balance of steam requirements and has a capacity of 230,000 pph. Feedwater temperature is 350° F. Waste wood and bark is fed into the boiler by three Detroit Stoker feeders. The grate is of the continuous-ash-discharge type. Natural gas fuel is introduced through six B&W ring-type burners. The boiler is single pass, design pressure is 725 psig, operating pressure 615 at superheater outlet; and operating temperature 750° F. Controls and instrumentation are by Bailey Meter, which also provided a three-element feed-water control. The Clarage forced draft fan has a capacity of 315,000 pph at 8.5 in. of water pressure. The Clarage induced draft fan handles 405,000 pph at 12.4 in. water pressure and 467° F.

COCHRANE DEMINERALIZER . . . Boiler water pumped to recovery and power boilers consists of condensate returns and make-up water. Make-up water is taken from the main millwater supply and passed through a 6-unit Cochrane demineralizing treatment plant, a two-step ion exchange process.



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Three 9'-6"x16' Vacuum Brown Stock Washers
Five 8'x14' Vacuum Washers
Two 9'-6"x16' Valveless Vacuum Deckers
One 9'-6"x16' Stainless Valveless Saveall
One Mechanical Foambreaker
Thirty-Six Wood & Steel Vat Flat Screens
Double-Shaft Mixers, Circulator Tower Equipment and Dilution Nozzles for Bleaching Stages
One Thick Stock Pump

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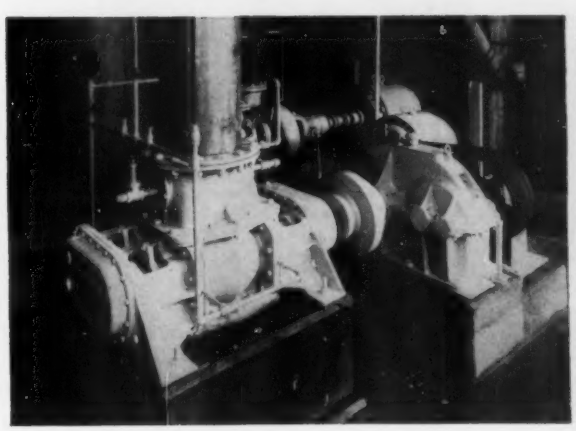
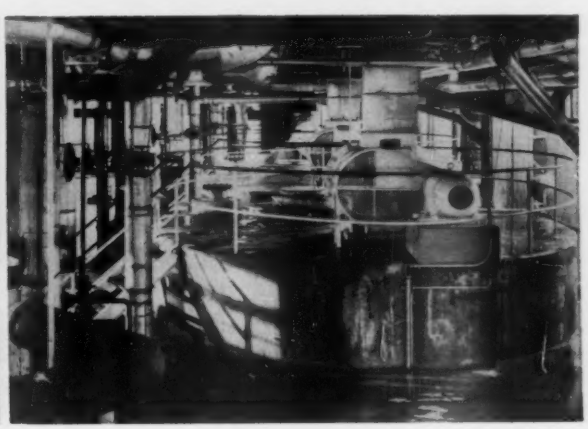
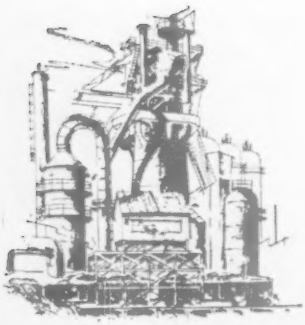
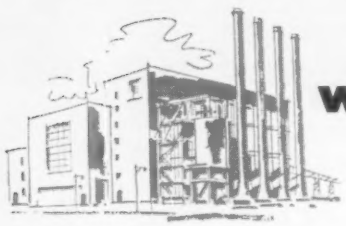




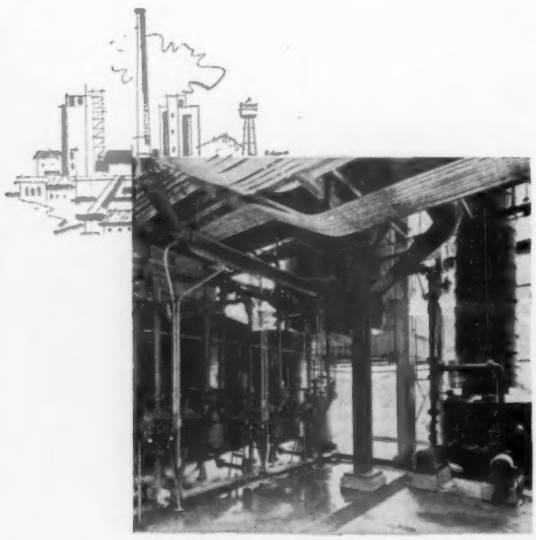


First in water conditioning



Cochrane

WATER CONDITIONING SYSTEM FOR *East Texas*



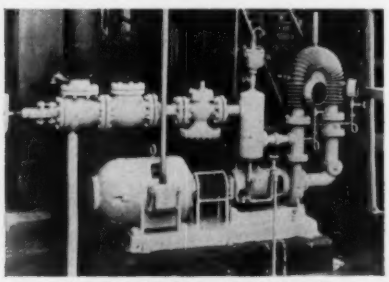
Make-up water for the new East Texas Pulp and Paper Company is taken from the main millwater supply. The water is treated by a 6-unit Cochrane two-bed silica removal demineralizing system. In the first stage the cations (calcium, magnesium and sodium) are removed. The water then passes through decarbonator (shown at right) to the second stage where the anions (silica, sulphates, chlorides, etc.) are removed.

Make-up water is then added to the returned condensate and deaerated by a 300,000 lb./hr. Cochrane Atomizing Deaerator from which it is pumped to the boiler.

In the new East Texas Pulp and Paper Company plant, Cochrane water conditioning equipment assures proper treatment of millwater for make-up. A Cochrane Demineralizing System and Atomizing Deaerator assure an adequate continuous supply of boiler feed.

For more economical operation of the digesters two Cochrane CB Condensate Return units were installed. Cochrane CB systems are widely used in paper mills for salvaging the BTU content of high temperature condensate. They also provide more efficient draining of the paper machines.

Cochrane's background and experience in every type of water conditioning system is your assurance of the right equipment for your plant. Consult our engineers on your next problem for unbiased recommendations. Write Cochrane today.



One of two Cochrane CB Condensate Return Units Draining Digesters.

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BURNS BARK AND GAS . . . This is rear view of Eastex's Babcock & Wilcox 230,000 pph. power boiler which is equipped to burn both natural gas and waste wood and bark.

CAUSTICIZING . . . Dorr-Oliver equipment, with green liquor clarifier with single compartment and mud washer and white liquor clarifier in 4-compartment units.

PNEUMATIC UNLOADING . . . Salt cake from an American Potash & Chemical hopper type car is being unloaded at Eastex by Fuller Airveyor of 10 lbs. per hr. capacity.

Pictures by PULP & PAPER

In the first step, positive metallic ions (cations) calcium, magnesium and solium are removed. In the second step, the remaining negative ions (anions)—silica, sulfates, chloride, etc. —are removed by the anion exchanger. The carbon dioxide is removed by degasification in an intermediate decarbonator before the basic anion exchanger. The Cochrane unit has a capacity of 200 gpm and is able to supply 100,000 pph of pure make-up water.

The make-up water is added to the condensate returns in a Cochrane deaerating heater of the atomizing type. It combines the functions of feed water heating with the primary function of deaerating. Having a capacity of 300,000 pph, it is mounted on a water storage tank and is operated at 45 psig. delivering feed water at 290° F. to Bingham 5-storage 800 gpm boiler feed pumps, one driven by a 500 hp motor and one by a DeLaval turbine drive.

G. E. TURBINE . . . Power system is designed for a dual supply of energy, with 7500 kw generated by a 7500 kw General Electric turbo-generator. Additional required power is purchased.

High pressure steam from recovery and power boilers is brought to a Crane Co. main distribution header, where it is distributed by Crane valves to the turbo-generator, paper machine drive turbine and turbine auxiliaries. DeZurik specialty valves and Pacific valves are found in many places—for evaporators, boilers, feedwater and turbo-generator.

RECAUSTICIZING SYSTEM . . . Eastex has a standard Dorr-Oliver clarifying system. Green liquor from recovery is pumped through a Dorr-Oliver green liquor clarifier in a single compartment. The clarified liquor is stored in a 75,000 gal. tank. Green liquor is pumped through a slaker where it is combined with burnt lime drawn from a 4,000 cu. ft. storage silo. Hot vapors from the slaker pass through a natural draft scrubbing system. The limed liquor is pumped to three 1,000 cu. ft. agitated continuous causticizers on the mezzanine above clarifying tanks so as to permit gravity flow to the white liquor clarifier. The white liquor clarifier and the white mud washer are in 4 compartment units.

A 6 ft. dia. by 6 ft. lime mud filter discharges into an 8 ft. dia. by 250 ft. Traylor heavy duty rotary lime kiln with a 50 ft. chain section inside the kiln. Exhaust gases from the kiln pass through a Peabody scrubber before being discharged to the atmosphere. Recovered slurry is reinjected into the system at the mud washer.

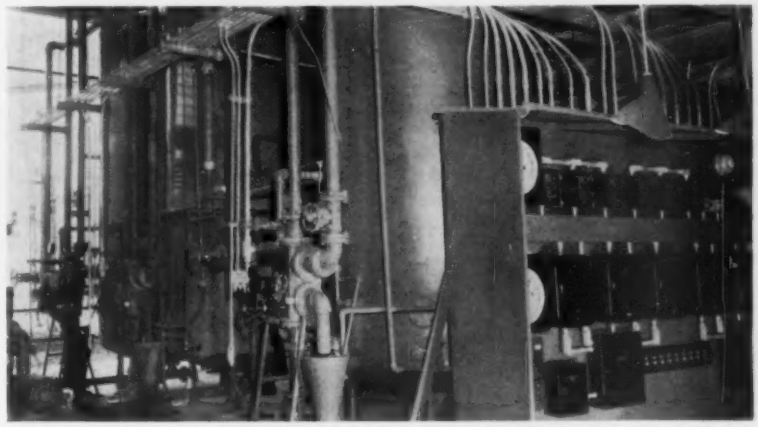
Burned lime is discharged into a totally inclosed pit in which is installed a Chain Belt hot lime drag conveyor mounted in a hard nickel alloy trough. Air from this pit is exhausted by the kiln secondary air fan to eliminate usual dust in this area. Most equipment is uncovered, providing a recausticizing unit relatively easy to keep clean instruments.

AUTOMATION AT EASTEX

$1,000,000 in Instruments Pays

Eastex uses over $1,000,000 worth of instruments and is one of the most highly automated mills in the industry. Eastex operators say automatic controls provide greater efficiency and quality control as well as reducing manpower requirements.

There are a grand total of 643 instruments at Eastex for control and



DEMINERALIZER FOR BOILER FEED . . . At left is cations unit of Cochrane Corp. demineralizer in East Texas and at right in this picture is the control board. At left corner of controls are Honeywell Brown Electronik instruments.

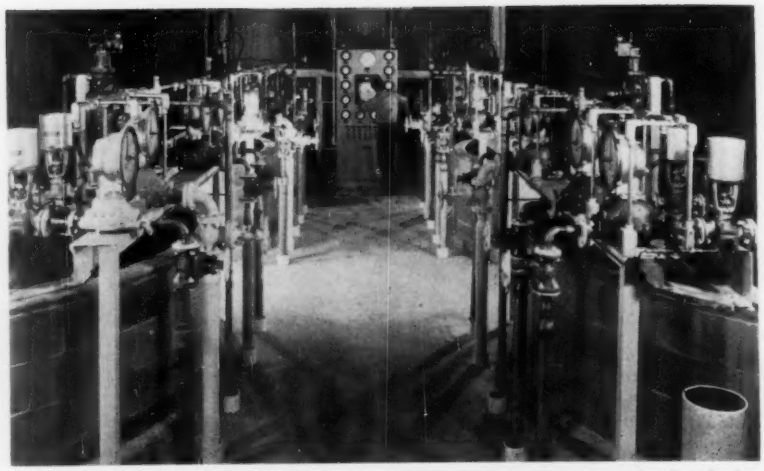
recording, not counting numerous gauges. There are 117 in the bleach plant, 192 in the machine room, 63 in the power house, and the balance in the pulp mill, etc.

Much thought was given to the function and location of instruments to derive greatest benefit. Similar types of instruments were used throughout the mill, requiring fewer spare parts, simplified maintenance and uniform appearance. Most instruments are mounted in totally enclosed cubicles, consoles or semi-consoles, giving excellent protection. The panel layouts are functional, each instrument being positioned to give the operator information where he can make most use of it and see results. Push-button stations and ammeters, where required, are mounted in similar panels adjoining the instruments. All tubing and wiring enters the panels through bottom openings. These openings are sealed off where the atmosphere is corrosive and air from the mill ventilating system is introduced as a purge.

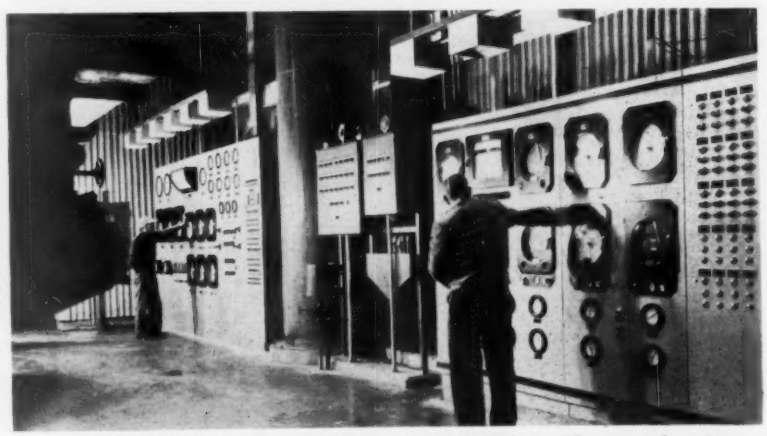
Economical locally-mounted indicating controllers are used wherever possible.

Considerable use of pneumatic transmission has resulted in shorter high pressure piping, reduced expenditure for anti-corrosive materials, shorter capillaries and faster response to process variations.

Copper tubing throughout has been installed in channel-type racks which provide support, protection and neat appearance. Air for operation of instruments is supplied from a separate compressor and is passed through a drying unit.



BLENDING STATION AHEAD OF MACHINE . . . Hard and softwood pulps, broke, size, alum, dyes and starch are all blended here, as desired. Fischer & Porter panel in background controls performance. Mixing Equipment Lightnin' mixers, Pacific and Walworth valves are used with gallonage gauges shown above, on each of four tile chests. Blends are proportioned through Niagara flow meters and Shartle control valves.



CENTRAL CONTROLS FOR RECOVERY AT EASTEX . . . These panels at Eastex provided for central operation of the Combustion Engineering recovery boiler. Taylor instruments are included and at far left is Bailey Meter control equipment.

WHERE MAJOR USES ARE FOUND . . . There are five control panels on the digester operating floor, one main panel which is concerned with items common to all digesters, and five cooking panels, one for each digester.

The operating floor is common for brown stock washing and bleaching, and all control panels are on a central aisle facing away from the washers concerned. Two small console panels were all that were required to house all electrical pushbuttons, ammeters, speed control rheostats, and two indicating controls for stock flow and blow tank consistency for brown stock washers. Each of the five bleach washers has a semi-console panel which houses all electrical controls and instruments. The instruments for screen room are concerned mainly with the storage tanks on either side of the screens. Included are the high density storage levels and consistency controls, decker stock chest levels and white water chest level control. Unbleached and bleached stock screens both have an individual cubicle type panel.

When the stock enters the machine room, it passes through a group of stock mixers set up for batch operation where controls are applied for raw stock, broke, alum, size and dye to be added in various proportions and mixed for a given time before being dumped into a storage tank beneath.

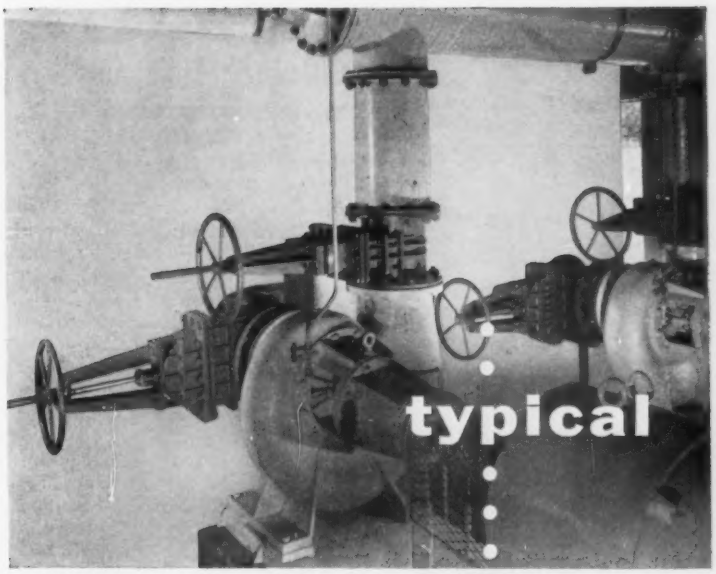
Jordan inlets are fitted with volumetric type pressure gauges which indicate the pressure drop across any one or group of jordans. Rotometers are used to indicate flow of size, starch and dye at various points of the process.

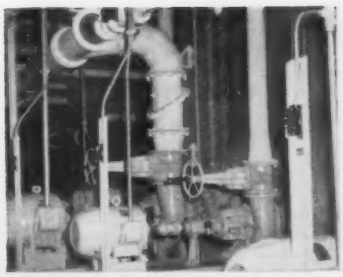
At the wet end of the machine, a large cubicle provides records and controls for stuff box consistency, machine speed, flat box and couch vacuum, filtrate overflow rate, various chest levels, etc. At various sections of the machine, benchboards and frame-mounted panels by Beloit enable the operator to adjust draw controls, press roll loadings, etc.

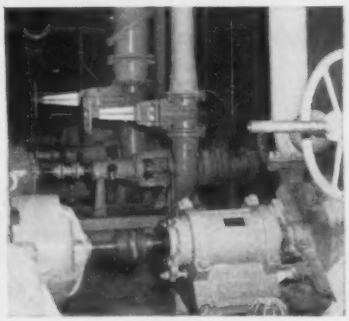
For dryer sections, there are steam pressure controls and differential pressure controls for efficient circulation and reuse of steam.

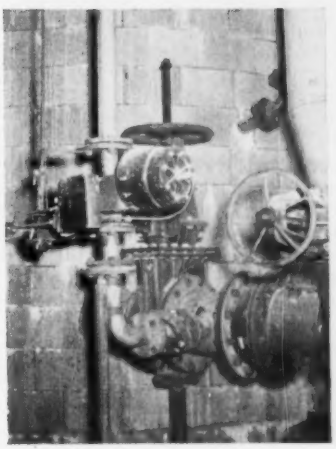
The recovery boiler panel provides records and controls of not only the boiler conditions, but also the complete liquor circuit. An electrical section makes possible operation of the boiler from a central location. The controls for the sextuple effect evaporator are mounted is a large cubicle adjacent to the recovery board.

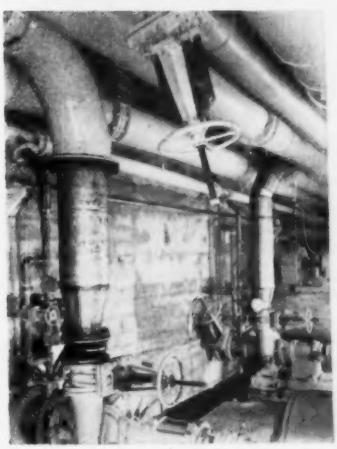
A cubicle panel located in the recuasticizing and lime kiln operators' test room provides control for green liquor flow and records of water flow and temperature, slaker temperature











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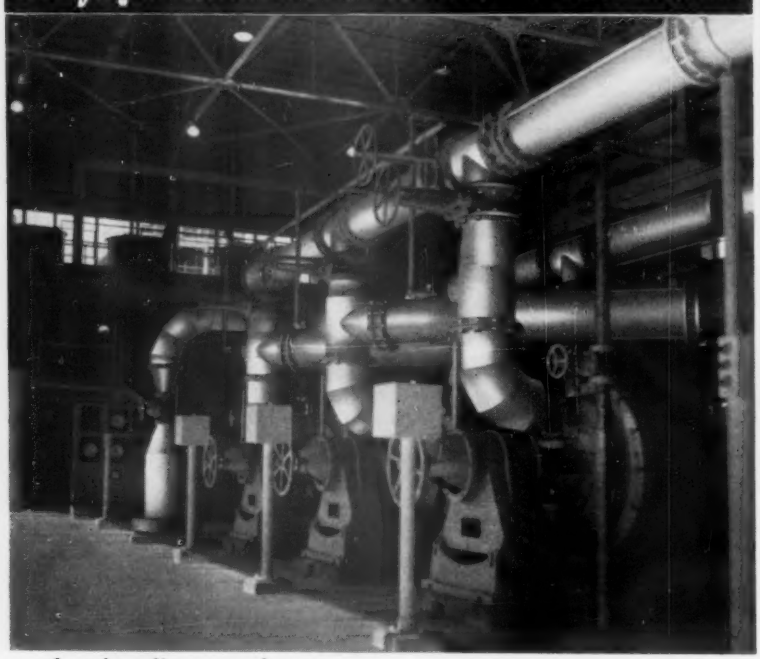
SOUTHERN CORP.....Charleston, S. C.

and the load on the rakes of the white liquor clarifier and mud thickener.

LINE-LOSS CONSISTENCY CONTROLS . . . A description of East Texas instrumentation would hardly be complete without special mention of the mill-wide use of the line-loss-type consistency controls which are giving extremely good service and accurate control. These units make use of low range differential pressure transmitters connected to two pressure taps in the stock line some distance apart. This distance may be calculated from tables on friction losses in pipe. High pressure water purges are used to prevent the connecting tubing from plugging with stock. A receiver controller is fitted with two recording pens, one for the controlled consistency, and the other for control valve position. These controls are giving accuracies within 0.25% consistency, even on lines subject to reasonable flow variations.

Instrumentation was supplied by Taylor, Bailey, Masoneilan, Fischer & Porter, and Foxboro. Control valves were by Fisher, Continental, Masoneilan and Annin. All pH controls are by Beckman.

Strefco CORROSION RESISTING PRODUCTS FOR THE PROCESS INDUSTRIES



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Streed Fabricating Company is proud to have played a part in the building of one of the most modern pulp and paper plants in the South—the East Texas Pulp & Paper Co.

Streed also furnished quantities of stainless steel piping, Hastelloy piping and plastic piping to help assure a high quality product at an economical production cost.

For information on Strefco corrosion resisting products write: *®Johns-Manville

Strefco STREED FABRICATING COMPANY P. O. BOX 451 ATTALLA, ALABAMA CORROSION RESISTING PRODUCTS FOR THE PROCESS INDUSTRIES

EFFLUENT DISPOSAL

Million Dollar Layout

The Eastex $1,000,000 effluent disposal system was subject of a special feature article in Pulp & Paper, May 1955 issue, page 66.

For many months, top executives of Eastex gave a great deal of personal attention to the problem, studying other systems and new developments in disposal methods.

The Evadale problem was studied by Howard Simons, Ltd., consulting engineers, the Institute of Paper Chemistry and the National Council for Stream Improvement, the latter providing a final plan.

Mill effluent is conveyed by means of a 14 mile canal into a swamp area of 4,500 acres owned by Eastex, draining at least 5 river miles below the Beaumont water supply intake into the Neches River. This swamp is highly contaminated from natural causes, including salt water from the Gulf of Mexico.

High b.o.d. sewer carries effluents from the recovery, recausticizing and digester room operations These are discharged into a 6,000,000 gal. capacity basin whose contents can be released at a predetermined measured rate into the canal.

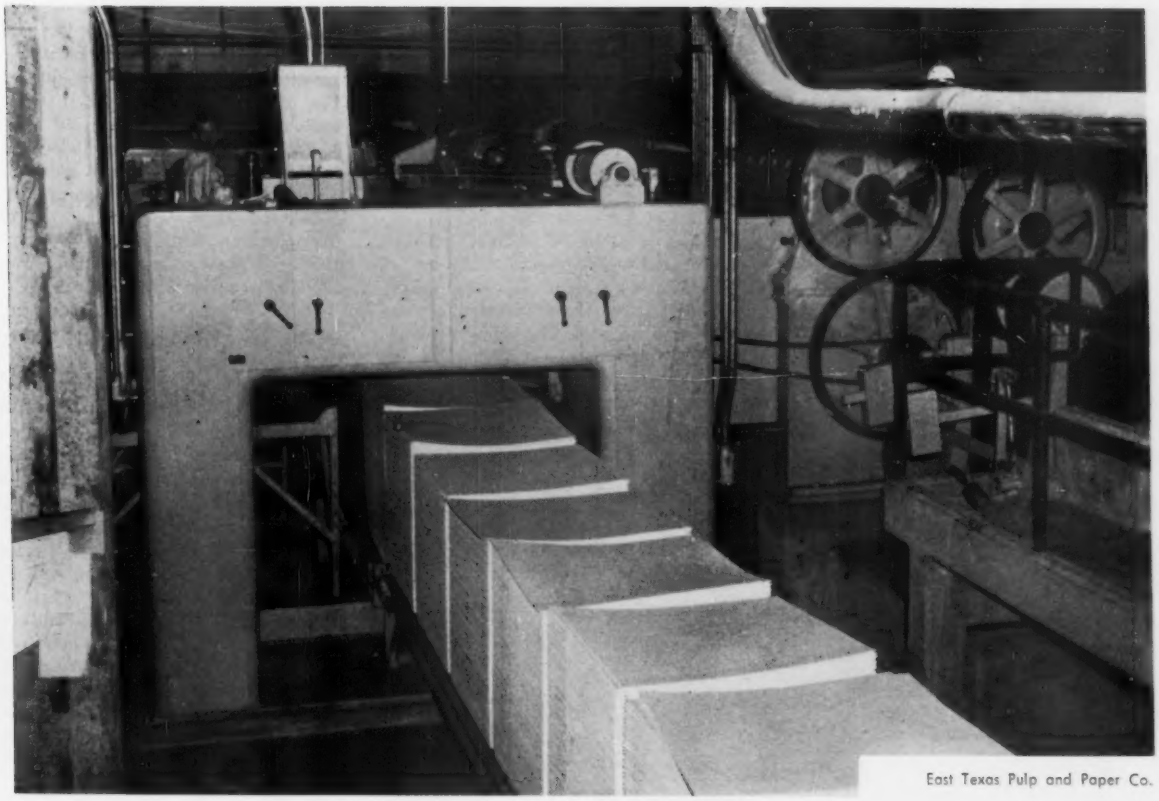
A settleable solids sewer carries effluents from the machine and screen rooms and any overflow from the log fume into one of two settleable solids basins, each with capacity of 3,000,000 gal. and providing a calculated detention time of 15 hours. Each basin is equipped with flow distributing devices at the influent end and on overflowing weir across the width of the basin at the effluent end.

Bleach plant sewers are discharged directly into the plant effluent canal.

It is intended to utilize the canal as a treatment device. Kraft mill effluents lend themselves to biological oxidation resulting in b.o.d. reduction, particularly if sufficient nitrogen salts or ammonia are added to the effluent to provide the minimum nutrient requirements for bacteria capable of reducing b.o.d. It is anticipated that this condition will prevail in the canal once the proper organisms and environmental conditions become established. The organisms will be furnished by the domestic sewage. Additional nitrogen can be supplied by anhydrous ammonia.

Five Parshall flumes are used to measure flows in the various sewers.

Total sewer flow from the plant is about 20,000,000 gal. per day.



East Texas Pulp and Paper Co.

210 INCHES OF PULP

Extreme sheet widths and space limitations present unusual problems in the design and layout of a pulp finishing room. Specific equipment must be provided and arranged to perform the various operations of finishing the sheet in the most economical manner regardless of all conditions. Essentially the requirements of pulp producers are quality bales and low labor costs.

At East Texas Pulp and Paper Company these requirements were met by the installation of a Lamb Cutter and Layboy and Automatic Bale Handling System.

Lamb pulp finishing systems have been developed to process and handle the pulp sheet in the most efficient manner from the time it leaves the dryer until it is shipped. The design of the machinery is controlled by many varying factors that differ considerably from one installation to another.

Every item of Lamb Pulp Finishing Equipment is specifically designed to perform its function under the particular set of circumstances governing the installation.

LAMB

LAMB-GRAYS HARBOR Co., Inc.

Hoquiam, Washington

ELECTRICAL SYSTEM

Features for Protection

To provide power for a connected load of approximately 23,000 hp at Eastex, two sources of power have been made available.

A tie with the Gulf States Co. utility system is provided by a 14 mile 67 kv wood pole line and a 5000 kva three phase delta-star transformer equipped with cooling fans. The transformer is located in a small substation on the plant site and delivers power to a 13.8 kv bus. A gang-operated disconnect switch, owned by the mill, is located at the end of this bus, and the switch feeds through a short run of high voltage rubber cable to a tie breaker on the main mill switch board in the turbine building.

Additional power is provided by the General Electric 7500 kw back pressure turbo-generator which feeds through a generator breaker directly onto the 13.8 kv bus in the main switch board.

From seven feeder breakers, power is distributed to plant loads at 13.8 kv and in all cases, except the well feeder, underground cables in Transite ducts and manholes are used. The cable is a lead-covered, paper-insulated 15 kv shielded type with an overall neoprene impregnated cotton tape. Generally the cables are "looped" through two or more power transformers by double potheads under the oil type primary gang disconnect switch on each tranformer.

The well feeder is run underground for about 800 ft. to the first pole of an overhead 13.8 kv line of approximately 4 miles in length. At eight points on this line, short tap lines feed to 300 kva 3 phase type OA 13.8 kv/480v transformers serving 300 hp deep well motors.

PROTECTION FROM LIGHTNING . . . Because the plant site is located in a fairly heavy lightning area, arresters have been installed at both high and low sides of the utility tie transformer and at the utility tie breaker. Arresters have also been installed at each 300 kva well transformer, at Pole #1, and behind the well feeder breaker.

The 13.8 distribution system is resistance grounded with resistors at both the generator neutral and the utility transformer neutral. The ground system consists of a series of 20 ft. copper well ground rounds driven at intervals around building perimeters or in groups at strategic points. These were in turn bonded together with a loop of 3/0 ground wire to make a continuous ground connection around the plant.

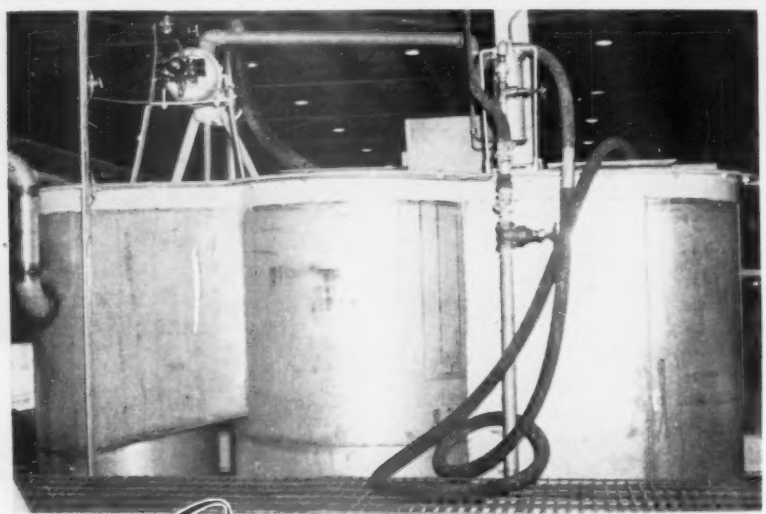
Plant feeders are protected by two overcurrent relays and one ground overcurrent relay. The utility tie feeder and transformer are protected by zone differential protection.

Transformers supplying power to mill loads are either 1000 kva 13.8 kv/480v units or 2000 kva 13.8 kv/2400v units. Both 2400 volt and 480 volt distribution are operated solidly grounded.

All motors up to and including 200 hp sizes are 440 volt. Motors 100 hp and smaller are controlled by combination line starters of the plug-in type.

The 2200 volt motors range in size from 250 hp to 700 hp. The 700 hp unit is the synchronous motor driving the Murco chipper. Except for the chipper motor, both synchronous and squirrel cage 2200 volt motors are controlled by air contractor linestarters and protected by current limiting high voltage fuses. The chipper motor is served by a 1000 kva transformer feeding directly into an air-circuit breaker, and is protected by overcurrent relays and a special thermal relay.

For adequate protection from water and chemicals, motors up to and including 50 hp are generally totally enclosed. Above this, totally enclosed units are enclosed, if considered necessary. All motors for recovery, and power boilers, bleach plant, digesters, flat screens and recausticizing are enclosed. Controls are generally grouped in special rooms for provided protection.



Stuff boxes fabricated by Northwest Copper Works

Congratulations

EAST TEXAS PULP & PAPER CO.

Northwest Copper is proud to have had a part in the construction of your new plant. The paper industry knows N. W. C. *does the job!*

Specializing in:

- Stainless Steel Products
- Stainless Steel Tubing
- Stainless Steel Valves
- Stock Valves
- Stainless Steel Fabrication
- Stainless Steel Fittings
- Stainless Steel Pipe
- Copper Smithing
- Lead Linings
- Lead Burning

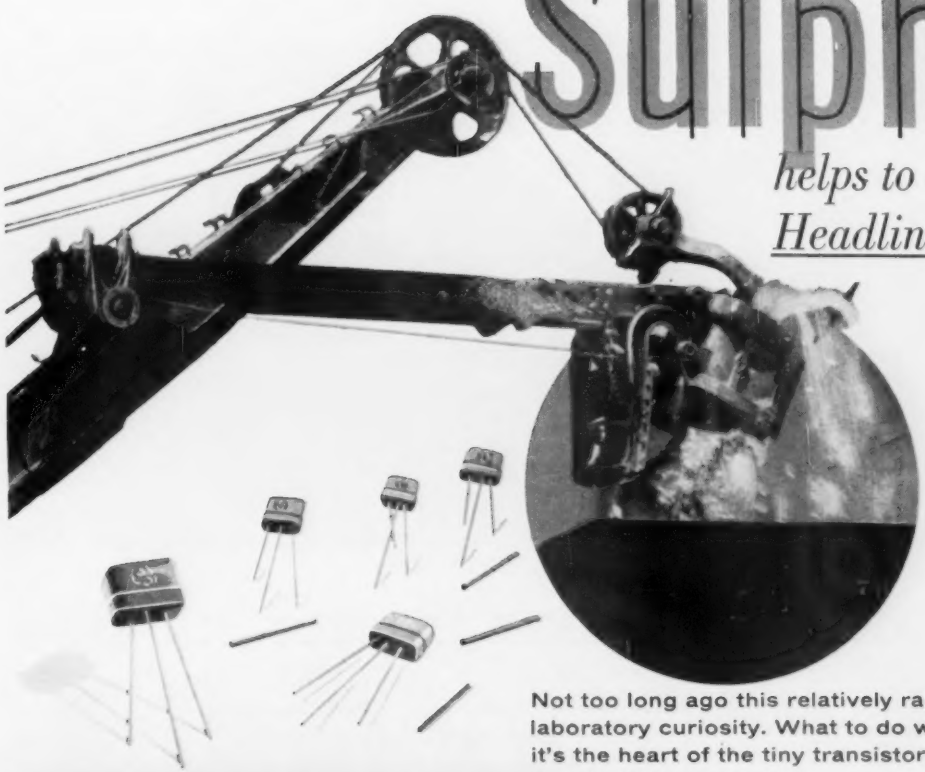
NORTHWEST COPPER WORKS

1303 N. RIVER STREET
PORTLAND 12, OREGON

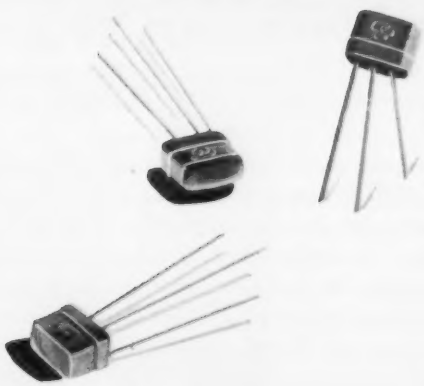
AT 4-2191

Sulphur

helps to create
Headline Products



GERMANIUM



Not too long ago this relatively rare metal was a laboratory curiosity. What to do with it? Today, it's the heart of the tiny transistor—the latest giant of electronics!

What's the connection between Sulphur and Germanium?

There are two, in fact. One is man-made, involving the routine leaching of Germanium ores with Sulphuric Acid prior to tetrachloride distillation. The other takes advantage of a peculiar property of the natural mineral, Germanium Sulphide. This mineral can be volatilized and then sublimed, providing an effective method of separating the Germanium from gangue material. The process is called "Concentration of Germanium by Sulphide Sublimation".

Again Sulphur, through its major derivative, Sulphuric Acid, and a natural sulphide play an important role in our ever-expanding economy. It is difficult to find many items in the broad chemical-metallurgical field that do not somewhere along the production line make use of Sulphur or a derivative.

Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.
811 Rusk Avenue, Houston 2, Texas

Sulphur Producing Units
- Newgulf, Texas
- Moss Bluff, Texas
- Spindletop, Texas
- Worland, Wyoming

"Outworks any other tractor its size"

... that's veteran logger D. C. Sanderlin talking about the performance of his Allis-Chalmers HD-6 in the Arkansas woods

Hamburg, Ark.—Sanderlin contract-logs 20,000 bd. ft. of pine per day for the Crossett Lumber Co. of Crossett, Louisiana.

For big, steady output when snaking or decking logs under average conditions . . . for extra performance under tough conditions, Sanderlin relies on his HD-6. He says:

"My HD-6 has plenty of weight to handle our jobs . . . and I sure like the power of that engine. My HD-6 outworks any other tractor its size I've owned."

It's Allis-Chalmers advanced design that makes the difference . . . like the all-steel, box-A main frame that soaks up shocks, protects tractor and mounted equipment. Add straddle-mounted final drives with tapered roller bearings that support *both* ends of drive shafts for greater strength, longer gear life . . . Allis- Chalmers diesel engine with follow-through combustion for more lugging power, smoother operation, long life . . . over six tons of *balanced* tractor weight for better flotation, traction and maneuverability.

Check with your Allis-Chalmers dealer . . . find out how the HD-6 can do *more work* for you . . . and find out how your dealer's reliable equipment recommendations and parts and service organization can give you best results on your logging jobs.

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

EASY TO USE, TOO...

The most powerful one-man chain saw you can own

7 HORSEPOWER

29 POUNDS

This picture shows how easily one man and the new Homelite 7-29 can go anywhere, cut anything from the biggest timber to the smallest tree.

With 7 horsepower packed into only 29 pounds, the Homelite 7-29 has power enough to do a real production job in the heaviest timber. Yet it's easy to carry through the roughest terrain and light enough for limbing or cutting in *any* position. It starts fast and keeps producing under the most grueling weather conditions.

With the new Homelite 7-29 you can take down trees 10 feet in diameter fast . . . get more cutting with less fatigue. Ask your dealer for a free demonstration!

Complete Line of Chain Saws for every Cutting Job

Model 17 — an all-purpose saw that brings down trees up to 4 feet in diameter. Available with special brush cutting and clearing attachments for complete versatility. 3½ horsepower, 20 pounds.

Model 5-20 — All the versatility of the 17 with added power. 5 full horsepower — 20 pounds. Brings down trees up to 6 feet in diameter.

Model EZ — lightest, most powerful direct drive chain saw ever developed. Only 19 pounds, full 5 horsepower. Brings down trees up to 3 feet in diameter.

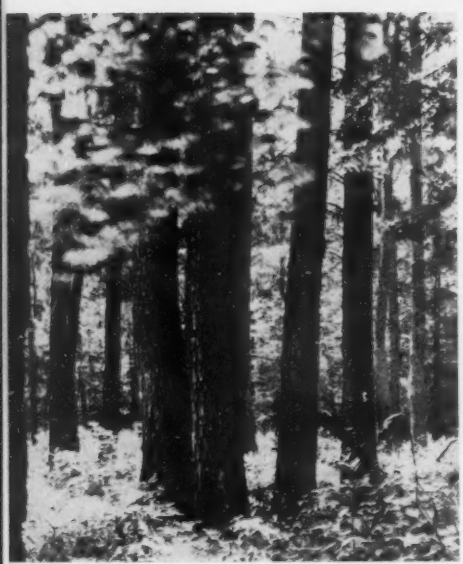
HOMELITE

A DIVISION OF TEXTRON INC.

7708 RIVERDALE AVENUE, PORT CHESTER, NEW YORK

Manufacturers of Carryable **PUMPS • GENERATORS • BLOWERS • CHAIN SAWS**

In Canada: Terry Machinery Co., Ltd.



MILLION ACRES, MOSTLY YELLOW PINE . . . A young stand (top) and older pine (below). Southwestern Settlement & Development Co. tree farming practices in East Texas will yield many millions of feet of pine annually, still harvest only half of growth.

CLEAN YARD, CLEAN HANDLING EQUALS CLEAN WOOD. The 750 ft. long, 3 ft. wide flume at Eastex, with three Lorain cranes doing different jobs. The nearest, a Type 50 K Lorain (20 tons), is dragging wood off r.r. cars into flume with wood rake. In foreground, Esco cast manganese chain and Esco alloy steel flights deliver washed wood to barkers.

PULP & PAPER SPECIAL FIELD REPORT

Eastex Wood—Today's and Tomorrow's

How Southwestern Co. does opposite of what it was created to do—how dealers and producers for Eastex operate

● East Texas Pulp and Paper Co. (whose new pulp and paper mill is fully described, for the first time since its completion, elsewhere in this issue) is literally blocked in by miles and miles of timber.

It owns 660,000 acres of well stocked and developed timber, mostly pine, through its newly acquired subsidiary division, the Southwestern Settlement & Development Co. It has exclusive pulpwood rights to the 550,000-acre timber domain of the Kirby Lumber Co., one of the biggest lumber mills in the world.

Independent contractors are given cutting areas on both the Kirby and the Southwestern lands. These same contractors may also supply pulpwood from outside these two ownerships.

Circumstances which led to the creation of Eastex had their origins over half a century ago when Kirby Lumber Co. and Houston Oil Co. were organized to develop lumber and petroleum resources in this part of Texas. That was long before anyone seriously thought of making pulp.

FOR SPECIAL PULP & PAPER FIELD REPORT on the Eastex pulp mill, paper mill operations and other articles on the new industry in Texas, turn to pages 66-95.

Houston Oil, partner of Time Inc., in Eastex until June 6, when Time became sole owner, had created Southwestern Settlement & Development Co. with a view to colonizing the areas cleared of forest by sawmills. But the pine trees kept coming in faster than the settlers.

HOW TREE FARMING STARTED . . . In 1901, when Spindletop Dome, near Beaumont, one of the most sensational oil discoveries of all time, started producing petroleum equal to 80% of Russia's, at that time world leaders in the field, the vast potentials of Southeast Texas were realized by a few farsighted business leaders. The Kirby company, only a few years old, and newly formed Huston Oil, between them, acquired 14 sawmills and began building up their vast timber acreage.

To Kirby went the sawmills and a 20 year privilege of harvesting all trees 12 ft. in diameter or larger at the stump. To Houston went title to the lands. Southwestern Settlement & Development Co. was formed to administer the lands divested of timber, mainly to find settlers while Houston held title to the mineral rights.

Large lumber companies made tremendous efforts to fill denuded lands with farmers. Special trains brought in prospects from the north; every promotional trick was used. But results were meager.

The Southwestern company worked hard. There were soil tests, demonstration orchards, model farms, but few settlers. At that time, Southwestern even tried to keep the pine seedlings from coming back over the lands. There were small victories. But the real victor was the pine tree. Its stands crowded back.

In 1933, Southwestern changed its viewpoint. It gave up the battle, and joined the enemy. It found trees were profitable, too, and in 1939 instituted a survey to determine the extent of restocking. The next year it adopted a long range forest policy.

Today, Southwestern, which started with entirely the opposite ideas in mind, is a monument to successful tree farming. Its "tree farm" extending over an area almost as big as Rhode Island, annually yields many million feet of pine, but still it permits harvesting of only part of the growth.

RAISES BEEF AS WELL AS TREES . . . Now, as a division of Eastex it has moved from Houston to Jasper, Tex., 45 miles north of Evadale. It still harvests timber for poles, piling and sawmills, as well as pulp. Its stumpwood is converted into resins, turpentine—some 20 products. Besides this, Southwestern also raises cattle as a crop. The beef cattle are pastured on new cut lands, until the trees start coming in.

Southwestern annually sells from 30 to 40 million ft. of selectively cut sawtimber, poles and piling. The volume removed is substantially below the estimated annual growth. Southwestern's holdings were extended into a dozen Texas counties and have supported many sawmills. The first paper mills came into the region and Southwestern began selling pulpwood. A naval stores plant paid $1 a ton for old stumps. A program of planting seedlings on areas not naturally reforested was begun.

Southwestern plans to start putting 15,000 acres anually into tree farms, on regular self-sustaining crop growing basis, by the fall of 1957. Next spring a 15,000,000 annual seedlings nursery will be ready for planting.

EASTEX WOOD USE . . . Eastex is consuming 240,000 cords of pine and hardwoods annually. This comes from over 1,000,000 acres in 12 counties of Texas and two Louisiana parishes just across the line.

The entire collection and delivery of 5-ft. pulpwood is done by independent contractors. They obtain nearly 100,000 cords annually from individual tree farmers and landowners. The Kirby Lumber Co. is supplying about 20,000 cords from its lands and Southwestern is producing over 60,000 cords annually. About 40,000 cords of chips comes from the new all-electric $16,000,000 Kirby sawmill at Silsbee, 8 miles from the pulp mill at Evadale. Kirby has installed a chip plant and a Hansel hydraulic log barker at Silsbee. The balance is from waste wood and chips from other sawmills.

Eastex's bill for pulpwood and chips is running about $4,000,000 annually and gives work to some 600 persons in the woods. Its Southwestern division will be enlarged. Now it employs 95 persons with a payroll of $420,000 annually.

Southwestern is installing the Continuous Forest Inventory system of computing growth and net inventory. CFI means to inventory timber by statistical sampling through permanent plot locations. Its accuracy is high. It really got rolling with development of the International Business Machines Mark Sensed Card. Mark Sensing provides an accurate live unit record and eliminates the costly step of manually transcribing and check the field recordings of the forester. For a full description of this operation see the article on CFI in the July 1956 PULP & PAPER, page 110.

Eastex Woods Executives

W. E. MERREM, Vice President of East Texas Pulp and Paper Co., and General Manager of its Southwestern Settlement & Development Co. Division, which Eastex acquired from Houston Oil on last June 6. Mr. Merrem and his division have moved their headquarters from Houston to Jasper, Texas, 45 mi. north of the mill.

KEY MEN AT EASTEX MILL for wood production and procurement are B. A. McMAHON (left), Woods Supt., and GEORGE WRIGHT (right), Asst. Woods Supt. Mr. McMahon had formerly been with International Paper Co. and Calcasieu Paper Co. Mr. Wright also was with International woods operations.

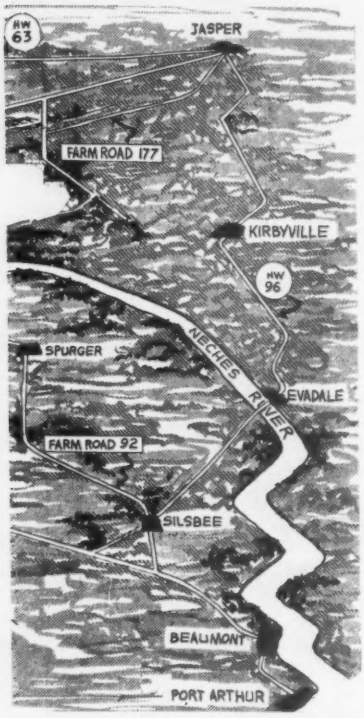
OTHER TOP MEN. O. R. CRAWFORD (top left), is Asst. to General Mgr. W. E. Merrem. J. W. PEDIGO (top right) is Manager of Operations. W. A. EDDY (lower left), is Superintendent. R. M. TOWNSEND (lower right), is Chief Forester.

HOW WOOD IS PRODUCED . . . Eastex eats up 700 cords of wood every day and this comes by rail and truck. Longest wood haul by truck is 65 miles, from west of Woodville, but that is unusual.

As for wood producers' equipment, many are using Disston, Mall, Homelite and McCulloch power saws. Some have tractors and others trucks with winches.

THE DEALERS–THEIR CONTRACTS . . . Then there are the dealers who are independent contractors. One of these, Fred Hardy, has a woodyard at Votaw, on the Santa Fe railroad. He calls it a buying station. He has a scaler there and pays in cash. He rents three trailers with "floats" and wood is loaded on these. He brings in up to 100 cords a week. The mill pays once a week.

Dealers, in turn, will contract with one-truck or two-truck operators. Usually each of these is run by the owner and a hired helper. Someone may be hired to cut the wood by the cord. The owners cut, when they can't haul. They may subcontract for both cutting and hauling.



THE COUNTRY AROUND THE EAST TEXAS MILL. Mill is at Evadale, just 24 mi. north of bustling seaport of Beaumont, which is surrounded by bayous, rivers and swamps. The road goes through Silsbee, where chips are supplied from a new Kirby lumber mill. Jasper, top of map, is new headquarters of the East Texas Co.'s Southwestern Settlement and Development Co. Division (its pulpwood division).

BRINGING THE WOOD TO EASTEX . . . Only two of these pulpwood operators and dealers were doing hauling for any other company. They can haul 8 or 9 cords, using "floats" and big trucks. Ordinary trucks carry 2½ cords. In lineup below are operators and dealers with Eastex officials, left to right: BARNEY A. McMAHON, Woods Supt. for Eastex; J. L. SIMMONS, Silsbee, Tex.; FRED R. HARDY, Beaumont: COLEMAN CLIBURN, Newton, Tex.; R. M. BUCKLEY, President of Eastex; EVERETT COBB, Newton; CHARLES SMITH, Woodville; VIRGIL MARTINDALE, Jasper, Tex.; C. N. BISHOP, Newton; JOHN OGLESBEE, San Augustine, Tex., and FRANK CARROLL, Cleveland, Tex. GILBERT WRIGHT and W. R. WARD, both Woodville, were absent.

Most dealers, like Mr. Hardy, buy stumpage on the open market and deliver to Eastex. A few may work under cutting and hauling contracts. Kirby sells Eastex stumpage and Eastex contracts for cutting and hauling.

On Kirby's own operations there is more mechanization, such as tractors, mechanical loads, etc. Eastex comes in close behind these lumber operations for pulpwood. It wants wood when green and not too old, before limbs are hard to trim. Kirby wood marked for Eastex has a blue paint spot. Knocked down trees are salvaged.

Deliveries to Eastex are running about 20% gum. The woods men are trying hard to get hardwoods out, and encourage pine. Kirby uses other hardwood for ties and logs. Gum pulpwood runs from 5 to 18 in. diameter and pine usually runs about 4 to 10 in. It averages 6 to 8 in.

As for roads, Kirby has built a lot, so has Southwestern and there are many country roads, so Eastex has not had to go into road building.

AT THE MILL WOODYARD . . . At the mill there is storage capacity for 20,000 cords "strawpiled." Wood is stored in two piles, each 750 ft. long by 80 ft. wide, running on either side of a centrally located 3 ft. wide flume, which carries wood to the drums at a speed of 5 ft. per second. Water is running about 3 ft. deep and moves at rate of 20,000 gpm.

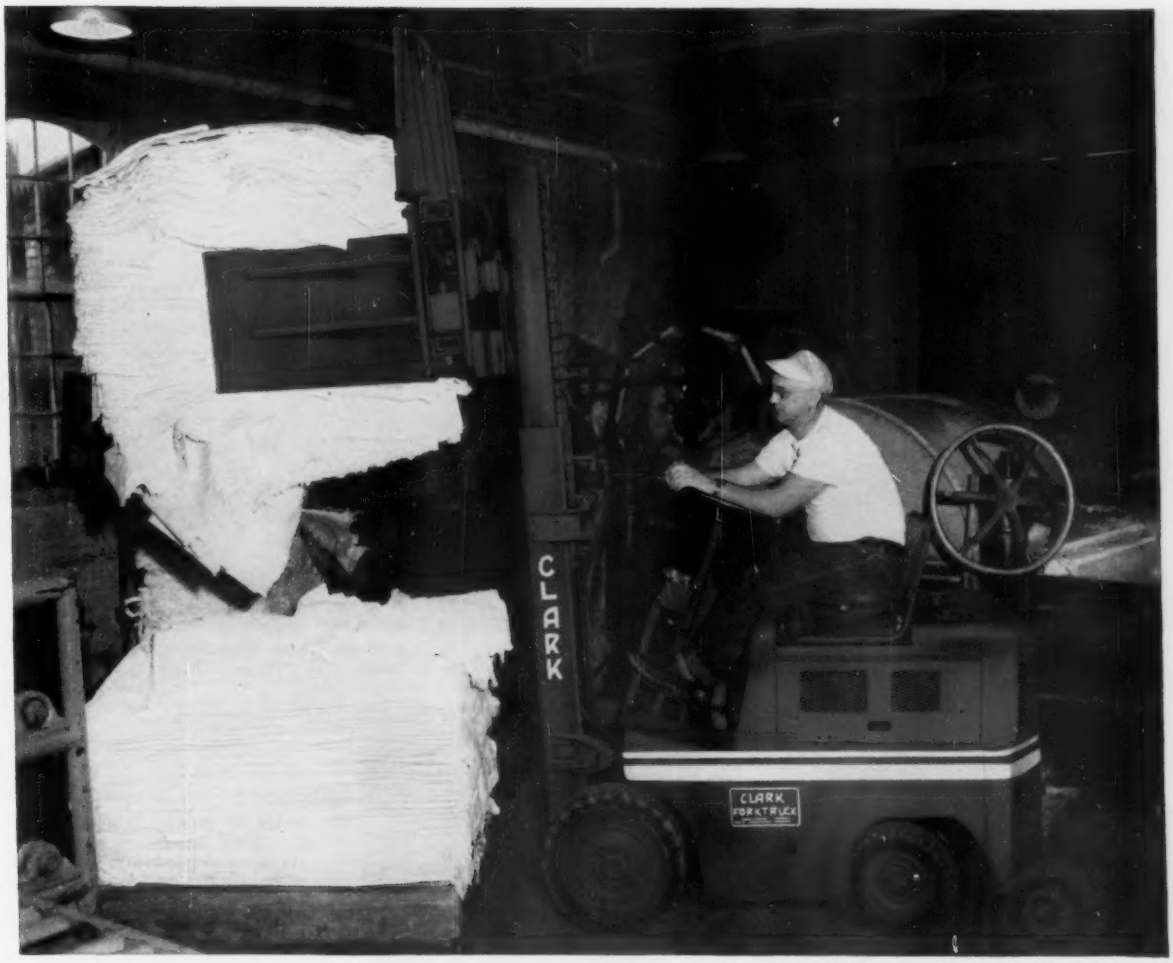
Each side of the flume has a sloping steel apron, to slide wood into the water. The flume is built of steel-lined concrete.

Two 40-ton Lorain Type 820 cranes and one 20-ton Lorain Type 50 K crane are used here. One of the big Lorains has an orange peel Owen grapple and takes wood out of the piles and feeds it to the flume. The other big Lorain has a sling attachment and is used to unload wood from trucks to the pile. The smaller crane manipulates a wood rake to drag wood off the r.r. cars on parallel tracks into the flume.

The flume was selected for low maintenance and for cleanliness, to get rid of much grit and waste. The whole woodyard is blacktopped for easier cleaning, too.

BARKING . . . At the end of the flume, the wood is caught up on a conveyor using Esco cast manganese chain and alloy steel flights to deliver to a split chute for the two Fibre-Making Processes 12 by 45 ft barking drums. Each drum handles 20 cords an hour.

At the end of the flume, velocity



At Fox River Paper Corporation—

CLARK TRUCK LOADS THE PULPER IN ONE PASS!

It used to take a man 10 to 15 minutes to load up for 50% stock. Now the job is done in a few seconds. Behind it all is a desire to get the most out of mechanical handling equipment.

"Use your Clark trucks whenever and wherever possible . . . in production, plant maintenance, storage or inter-plant traffic," Phil Dixson, Vice President in Charge of Manufacturing, tells his employees. This one principle has been the generator of many employee ideas for this Appleton, Wisconsin, paper company.

WHEN LOADING THE PULPER—why do it by hand when a Clark truck can load 1,000 lbs. of rag pulp in seconds. WHEN PUTTING NEW FELTS ON MACHINES—why get ladders when a Clark truck serves as a safe, portable scaffold. WHEN THE MILLWRIGHTS OVERHAUL EQUIPMENT—why use chain and hoists when a Clark truck can do the heavy lifting jobs. And so the list goes.

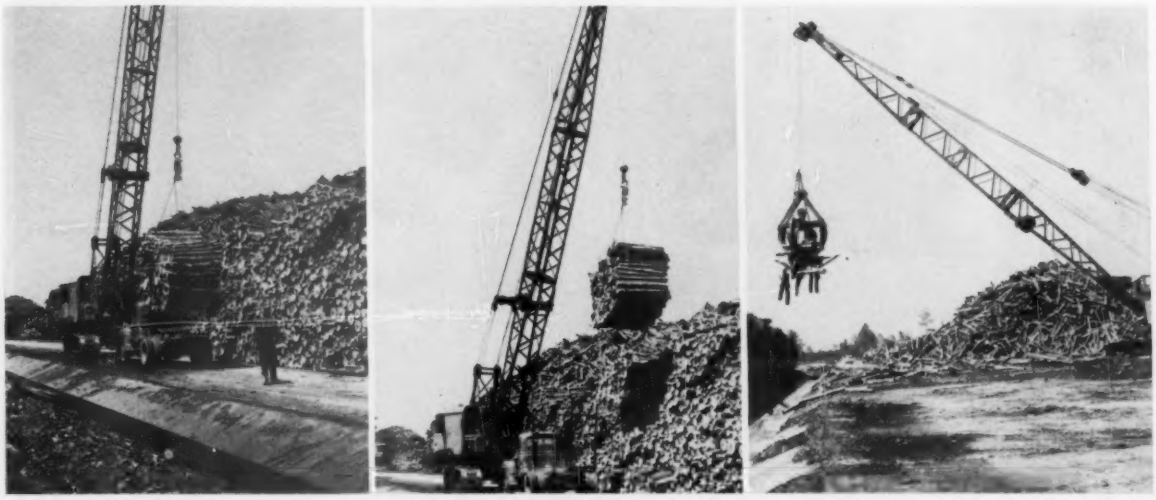
"Our employees know that the best way to take the work out of work is to do the job with a Clark truck," Mr. Dixson goes on to say. "Our fleet of 10 Clark trucks is kept busy on every job imaginable. We get more done and morale runs high."

How about your mill? Your local Clark dealer is the man to see. You'll find him listed in the Yellow Pages under "Trucks, Industrial."

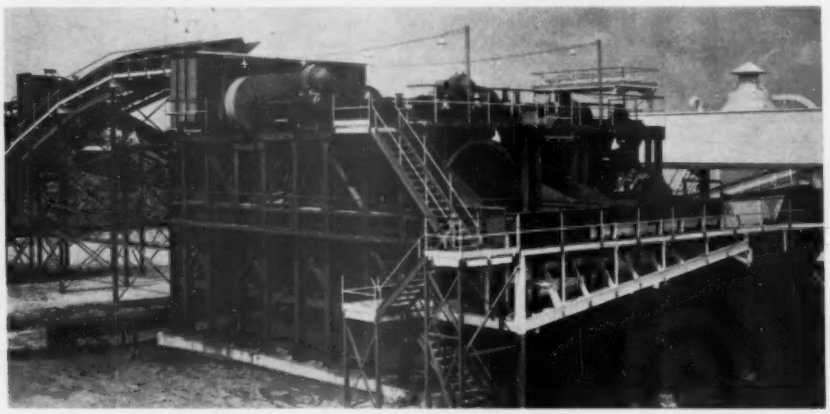
CLARK® EQUIPMENT

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 201, Michigan

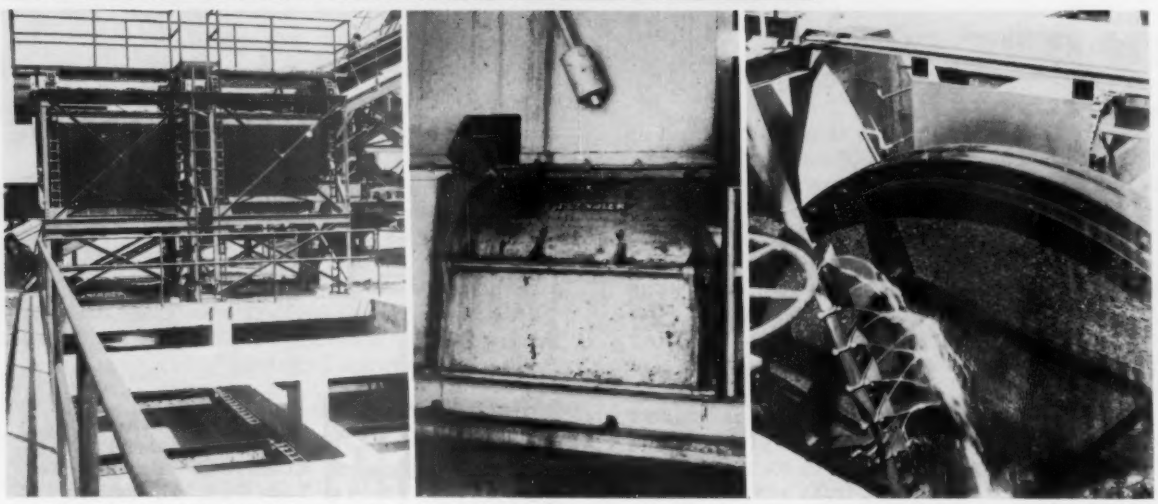
A BETTER BUY WITH LOCAL SUPPLY—*Genuine Clark Parts*



EACH CRANE HAS DIFFERENT JOB . . . PULP & PAPER pictures at left show a 40-ton Lorain unloading truck wood with a sling and lifting it to top of pile. In view at right, another 40-tonner with Owen orange peel grapple is dropping wood from pile into flume.

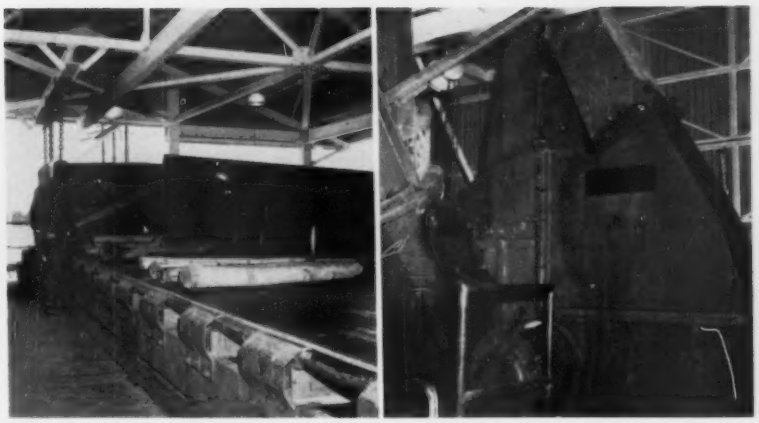


WHERE WOOD IS BARKED . . . Esco manganese chain on conveyor at left brings wood to split chute for two Fibre Making Processes 12 x 45 ft. barking drums. Each drum handles 20 cords an hour.



CLEANING UP FLUME WATER . . . At left, two Chain-Belt Rex type heavy drag grit collectors which deposit loose bark and grit on conveyor to Gruendler Hummerhog (middle) which pulverizes refuse for boiler fuel. Meanwhile, water passes through settling basins and two Link-Belt disc screens (one in picture at right, for removal of fine particles before being returned to flume.

slows up and loose bark, grit and water pass through slotted holes in the conveyor bottom to a settling basin. Material is removed by two Chain-Belt Rex type heavy drag grit collectors which deposit it on an Esco chain conveyor to a Gruendler hog, driven by a Westinghouse 150 hp. motor. Pulverized fuel is then carried to the power boiler. Meanwhile, water passes through settling basins and two Link-Belt disc screens 10 ft. 7 in. dia., for removal of fine particles, and sent back to the head of the flume by two vertical Bingham 10,000 gpm pumps. The screens are in a channel 12 ft. wide, 12 ft. deep. Some fresh water is added and like amount of dirty water pumped to sewer.



WHERE CHIPS ARE MADE . . . Left, on 5 ft. wide ½ in. thick Goodyear belt, clean good wood is separated to go to D. J. Murray 102 in. 10 knife chipper at right. Rejected wood returns on another belt to barkers.

CHIPPING . . . After barking wood goes to a box type 3 chain conveyor which delivers to speed roll and then to a 5 ft. wide ½ in. thick Goodyear sorting belt. Two men here sort wood, clean good wood going to an 18 in. rubber belt to the D. J. Murray chipper. In fact, only six men are required to operate the whole wood preparation plant. Burned, unbarked or catface wood is returned to drum for further cleaning on another 18 in. belt. The sorting belt is about two ft. above the operating floor. The sorting deck is roofed but sides are left open and structural materials are steel and hardwood.

The 102 in. 10 knife chipper is driven by a 700 hp, 327 rpm, 2300 volt, 3-phase, 60 cycle Westinghouse synchronous motor. Chipper mouth is 22 in. Chips are blown to a cyclone and drop into a distributing chain conveyor that distributes them to three surge bins. These have Link-Belt rotary vane feeders at bottoms each 36 in. dia. by 6 ft. 5 in. long, and 2 to 6 rpm, with Westinghouse motors and Link-Belt PIV variable speed control units and Link-Belt helical gears. Chips are fed into three Orville Simpson Rotex chip screens of 20 cords per hr. capacity each.

Oversize material is conveyed to a 36 in. Carthage rechipper, which blows its rechipped material to a cyclone over one of the screens. Fines go to boiler house for hogged fuel.

All accepted chips go by 30 in. 45° troughed rubber belt conveyor to three concrete chip silos of 200 cords capacity each. The silos have steel cone bottoms with Link-Belt rotary steel plate feeders each 17 ft. dia. Their capacity varies from 0 to 25,000 cu. ft. per hr. at 5.2 rmp. They feed to 42 in. Goodyear Style 13 conveyor belts and chips pass over a Transweigh Beltmeter to weigh them electrically on way to the pulp mill. The silos are 70 ft. high and 40 ft. in diameter.

Chip screen building is of steel and concrete and chipper, hog and electrical switch room as well as screens are under one roof. All belt conveyor rollers were by Hewitt-Robbins.

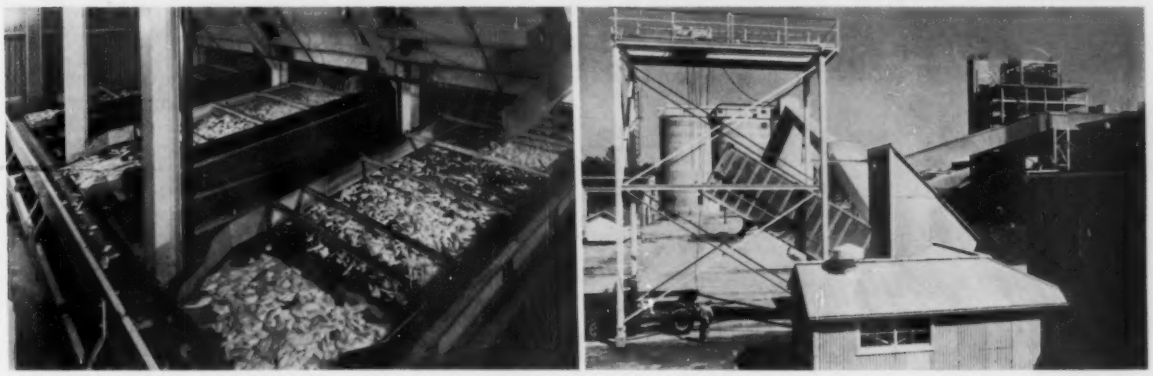
HOW SAWMILL CHIPS ARE HANDLED . . . Also in the yard is a handling system for chips from the Kirby sawmill and other sawmills. This handles about 150 units a day. A Fuller airblower unloads the chips and they are blown through a 10 in. pipe all the way to the top of the 70 ft. high silos. These are blown about 450 ft. by a Roots Connersville 150 hp. unit.

East Texas Has More Forest Land Than in 1935

East Texas has almost one million acres more forest land than in 1935, according to a 1953-55 survey. This increase is due mainly to revision of abandoned upland farm lands to forest.

The survey was a joint effort of the U. S. Southern Forest Experiment Station, Texas Forest Service, and of private industry.

Forests cover 11,655,800 acres of the 19,038,700 acres of total land in the commercial timber belt of east



HANDLES 20 CORDS PER HOUR . . . These three Orville Simpson Rotex chip screens (left) provide final processing in wood plant before chips go to 70-ft. high chip silos (in background of picture at right). In foreground of this picture, is unloading station for sawmill chips, which are blown 450 ft. to top of silos by Fuller airblower. Note trailer tipped up to drop chips to blower.

Texas. The most heavily timbered portion is the Southeast.

The volume of all merchantable trees totals 7 billion cubic feet, of which over half is softwoods. Softwoods are mainly Southern yellow pines, but include cypress and redcedar.

The extensive timber resources of east Texas support about 70 large sawmills, several hundred portable sawmills, 3 wood-pulp mills, and over 50 miscellaneous wood-using plants. The 3 pulp mills are now using about half as much pine annually as all of the sawmills together.

A full report of the survey may be secured from the Texas Forest Service at College Station, or from the Southern Forest Experiment Station, 2026 St. Charles Avenue, New Orleans 13, Louisiana.

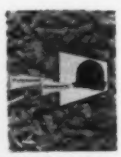
EAST TEXAS PULP & PAPER CO. selects MURCO Chippers

East Texas Pulp & Paper Company, Evadale, Texas installed a MURCO 102" 10 Knife Chipper with 24½" diameter V-Spout and Blower Housing, and new style mechanical brake, direct-connected to 700 H.P. synchronous motor as equipment in their new mill for capacity production of pulpwood chips.

Since all mill requirements are not for giant-size chippers, we design and manufacture chippers in the following diameter discs: 36", 42", 48", 50", 54", 56", 60", 64", 72", 75", 84", 86", 88", 90", 96", 110", 120", and 150", in addition to the 102" chipper illustrated above. Whether it is a 36" chipper or the giant-size there is a reason for the wide preference for MURCO Chippers by paper mills throughout the country . . . it is their outstanding performance, producing more and better chips at less cost, with less sawdust and slivers, free from repairs, while at the same time having production records of one hundred cords or over per hour . . . and because MURCO Chippers are compact they require less floor space.

MURCO V-TYPE SPOUT FOR PULPWOOD CHIPPERS

Adaptable to any make of chipper, MURCO V-Type Spout will positively hold any size stick or log . . . wood moves direct in a straight line with no side movement to disturb cutting.



Write FOR THIS NEW CHIPPER BOOKLET NOW!

D. J. MURRAY MANUFACTURING CO.

Manufacturers Since 1883

WAUSAU, WISCONSIN

Pulpwood Personnels

JOE S. CLIFFE, for nearly 30 years active in logging operations of Comox Logging & Railway Co. and its present parent company, Crown Zellerbach Canada, has been appointed logging manager for the latter, succeeding **J. C. SHEASGREEN,** who resigned recently . . . **A. W. RAFTER,** assistant logging manager, has been named vice president of Northern Pulpwood; he is also vice president of Comox Logging and vice president of Canadian Tugboat Co, all CZ subsidiaries. The reorganization means added responsibility for **W. S. CHALMERS** and **O. W. HARMSTON,** divisional supts. on Vancouver Island . . .

JULIAN H. MERRILL, one of the best known woodlands executives in Eastern Canada, and long in charge of pulpwood production for Great Lakes Paper Co. at Fort William, Ont., has been elected vice president with supervision over timber operations . . .

CARROL G. TURK, formerly with Martin Machine Co., Kewanee, Ill. has joined Thew Shovel Co., Lorain, O. Mr. Turk is a U. of Missouri graduate engineer and had been vice pres. in charge of engineering and production while with Martin Machine Co.

W. R. CRUTE, Champion Paper and Fibre Co., Pasadena, Tex., was elected pres. of Texas Forestry Assn., succeeding **SIMON W. HENDERSON,** Angelina County Lbr. Co. Other officers elected were **R. W. WOTHAM, JR.,** Southland Paper Mills, 1st vice pres.; **RICHARD W. TOWNSEND,** Southwestern Settlement and Dev. Corp., 2nd vice pres.; **ED WAGONER, JR.,** exec. secy.

F. B. WILLSON, a veteran of 46 years service with International Paper, has retired as res. mgr. of woodlands, New York div. **G. A. PESEZ,** formerly asst. mgr. was named to succeed him.

South Using More Pulpwood

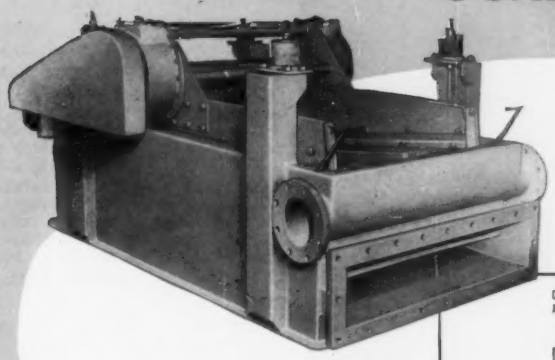
Pulpwood use in Georgia and seven other South Atlantic states is up about half a million cords over last year, according to the U. S. Commerce Dept.

Pulp mills used about four million cords of wood in the first four months of 1956 in the South—about 36% of the nation's entire pulpwood consumption for the manufacture of paper and its products.

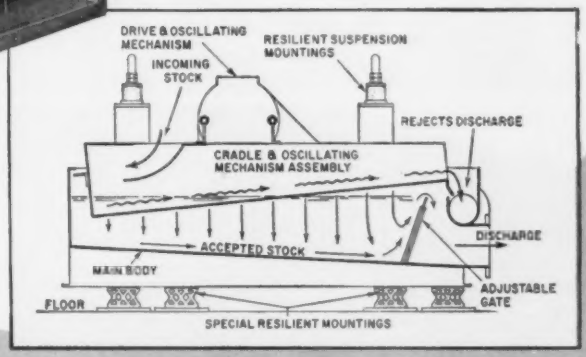
Tree Planting in Michigan

Michigan's state conservation commision has approved a program for planting trees on 250,000 acres over the next ten years. Areas to be planted are in both the Upper Peninsula and northwest part of the Lower Peninsula of Michigan.

GYRO-FLOTE* SCREEN



A product of Black-Clawson's stock preparation machinery division.



for many pulp, paper and board mill applications

The new Black-Clawson Gyro-Flote screen is a self-contained, flat plate vibratory unit which employs a gyroscopic principle of oscillation to provide a rapid, gentle action. A highly efficient screen, the Gyro-Flote recovers all usable fibre and rejects unusable material and trash.

In a groundwood pulp system it will serve as a bull screen or tailing screen. In a chemical or semi-chemical system, it is used as a knotter screen, and for paper machine screen rejects—also as a primary screen after the washers. It's especially effective in a waste paper cleaning system.

Gyro-Flote capacity depends on the application and size of perforations. Power input remarkably low.

Contact the Shartle Division for details on operation and performance.

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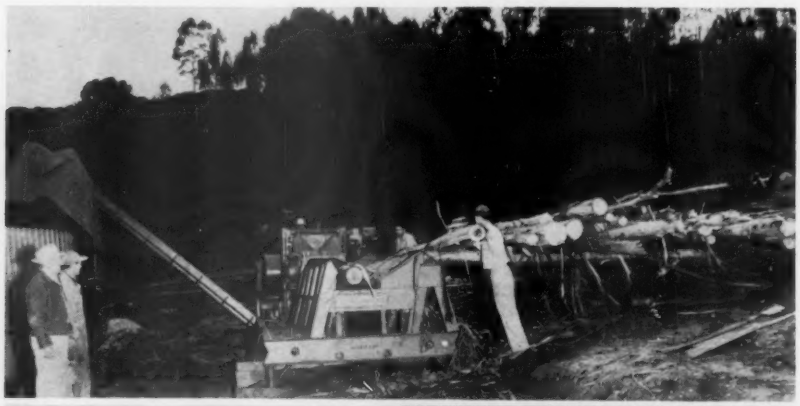


A NEW CHIPPER FOR A NEW PULPWOOD IN FAR WEST . . . Eucalyptus being fed manually from deck onto the four row Chain-Belt Rex H78 chain conveyor which takes the logs to the chipping unit, a Sumner Iron Works Model 45 hog, in eucalyptus grove near Salinas, Calif. For transporting, the chip conveyor (at left), is disjoined and placed on trailer (below), in space at left of infeed. Note stringiness of bark.

SIDE VIEW OF NEW PORTABLE CHIPPING OPERATION . . . Chips are being loaded into Trailmobile open van type trailer for 120 mi. haul from Salinas to Fibreboard mill at Antioch, Calif. Eucalyptus grove is in background. Note man on woodpile (left), with Homelite saw.

New Equipment for "New" Pulpwood in West

• Fibreboard Products Inc. has found a use for one of California's waste woods—eucalyptus. (Some years ago eucalyptus was used by a Southern California mill for roofing felt, but this was discontinued. Until now, it had not been used for regular paper or paperboard grades in that state.)

Australian eucalyptus was planted in the early days in California for windbreaks, and in plantations for commercial use that failed to materialize.

From the Mexican border through the central part of the state, there are various stands growing, mostly in valleys and rolling foothills.

Eucalyptus has been used for high quality pulps in Australia, southern Europe, Brazil and South Africa, including dissolving grades. It occurred to Fibreboard that California's stands might be put to similar use on account of its fast growth and the fact that they were looking for wood close to the Antioch mill where other species were unavailable.

Pulping analyses by Fibreboard and the Institute of Paper Chemistry indicated it was suitable for the Asplund semi-chemical pulping process.

NEW CHIPPER DESIGNED . . . Fibreboard decided the best way to harvest the trees would be to chip the material under 12 in. in diameter in the field, since a large proportion of the per acre volume is in small trees and limbs under this size. Another reason: Many groves are in semi-urban localities and on farms where good clean-up is imperative. Logs over this diameter are handled by conventional methods.

A portable chipper was designed by Marion Fish, chief engineer, and Cy Riddell, assistant chief engineer, Sumner Iron Works, Everett, Wash., in conjunction with Fibreboard's Timber Division.

The complete chipping plant consists of a Sumner Model 45 hog, driven by twin GM 4-71 through belts, the chip conveyor for loading trucks and the log conveyor.

The entire plant is 8 ft. wide, 34 ft. long, and weighs approximately 40,500 lbs., and is carried on a low-bed Fruehauf trailer.

A Rex chain (Chain-Belt Co.) chip conveyor, and the log conveyor drive, are both powered with hydraulic motors.

HOW OPERATION IS CARRIED OUT . . . Fred Ash and Sons is operating the unit under contract near Salinas, Calif.

Falling, bucking and limbing are done mostly with Homelite gas saws. Logs are skidded in tree length with a Cat D6 to a central bucking and limbing area. A Cat D4 equipped with front end fork lift log loader lifts material 10 in. diameter or under to

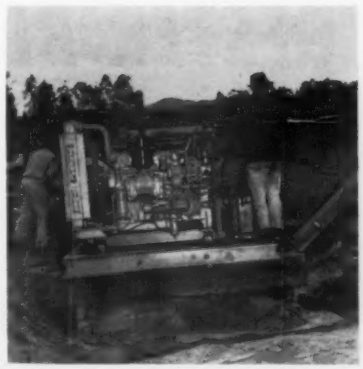
a deck, and the material is fed manually onto a log haul which consists of four rows of Rex H78 chain which feeds the material into the Sumner hog. It is planned to add a live log deck to speed up the operation and cut down on manpower.

Logs over 10 in. diameter are hauled direct to Antioch via two Mack logging trucks and conventional logging trailers. Material under 4 in. diameter, along with branches, leaves, etc., is piled and burned.

The chip conveyor deposits the ¾ in. long chips in an open van type Trailmobile trailer which can carry eight units (200 cu. ft. per unit) of chips, to the mill at Antioch, about a 120 mile haul. The chipper has a capacity of 8 to 10 units per hour.

It takes about a day to pick up the unit and move to a new setting.

Three men operate the chipper unit, besides two fallers, a general utility man, and two cat skinners. The operation is under the direction of W. B. Lindberg, in charge of wood procurement for Fibreboard's San Joaquin Division at East Antioch.



WHAT POWERS THE NEW UNIT . . . This end view shows the twin General Motors 4-71 diesels which power the specially designed portable chipper.

South Way Ahead of Stanford Report

"We will be from six to seven years ahead of the Stanford Research report in the South by 1958 . . ."

"We must be very cautious about further expansion of the industry in the South . . ."

"The Timber Resource Review reaffirms that there is no pulpwood surplus in the South . . ."

"No part of the forest products industry is immune from the inroads of competition in materials . . ."

Bulked together, these four comments on the South's industrial problems are strong enough to make a powerful news lead for any story on the pulp and paper industry. Each, in itself, is worthy of a headline. Last month they were repeated by different industry leaders in four separate meetings of the Southern Pulpwood Conservation Association held throughout the South.

In general, woodlands managers and company executives seemed most concerned about demands on the South's pulpwood supply—now and in the future. There is little doubt that pulpwood supply is one of the most pertinent questions discussed in Dixie today. These four meetings—at Biloxi, Miss.; Nacogdoches, Tex.; Columbia, S.C., and Nags Head, N.C.—all produced comments on Southern pulpwood worthy of stories in themselves.

HIGHER TREND THAN STANFORD REPORT . . . Frank Heyward, of Gaylord Container Corp., a Div. of Crown Zellerbach Corp. at Bogalusa, La., speaking at meetings in both Biloxi, Miss., and Nacogdoches, Texas, said that increased production of this industry has established a higher trend than predicted in the Stanford Report and the Timber Resource Review.

Mr. Heyward pointed out that reports show 193 million acres of forest land in the South, but this includes hardwoods, oak-pine types and low-site quality pines. Actually, he said, there are 46 million acres of highly productive Southern forests on which the pulp and paper industry is now dependent.

MATERIALS COMPETITION IMMINENT . . . At Biloxi, J. E. McCaffrey, vice president and general manager of International Paper's woodlands div. at Mobile, said: "In the last 10 years the production of paper and board has risen 55%—that's 12.5 million cords." Then he added, "No part of the forest products industry is immune from the inroads of competing materials and competition will certainly increase. We must make a product that will compete with substitutes, both in quality and price."

Gene Martin, of Gair Woodlands Corp., Savannah, Ga., speaking in Columbia, S.C., told SPCA members the "focal point of our intensive management program must be directed to the small landowner" who, according to Mr. Martin, is presently furnishing 75% of the South's pulpwood requirements and will always furnish 50% or more.

According to Mr. Martin, at the present rate of pulpwood production in the South, the region will be from 6 to 7 years ahead of the Stanford Report by 1958.

WARNS OF OVER-EXPANSION . . . W. J. Bridges, Jr., of Union Bag and Paper Corp., Savannah, Ga., told the group the Timber Resource Review has "served to reaffirm that there is no pulpwood surplus in the South."

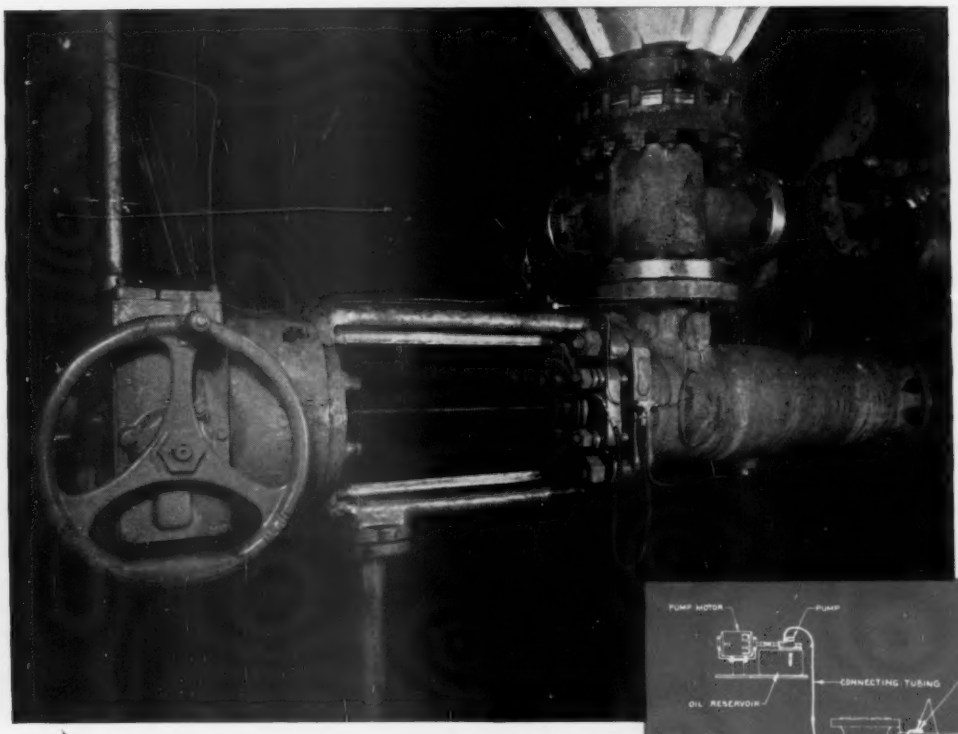
He said: "We need to do more to grow more on our own lands. We need to beef-up our already good conservation activities aimed at helping others grow more wood.

"We must be very cautious about further expansion of the industry in the South."

Emphasis on helping the private landowner in every way possible to grow more wood was also stressed by Henry Rigby, of Champion Paper and Fibre Co., Hamilton, Ohio, at the Nacogdoches session while at Nags Head, N.C., methods for furthering conservation were discussed by a panel.

HOLD TEXAS MEETING . . . Shown attending the Area I meeting of Southern Pulpwood Conservation Assn. in Nacogdoches, Texas, are (from left) H. J. MALSBERGER, SPCA forester and general manager, Atlanta, Ga.; WES SENTELL, SPCA President, Southern Advance Bag & Paper Division of Robert Gair Co., Inc., Hodge, La.; C. Y. TOWNLEY, Area I chairman, Champion Paper and Fibre Co., Huntsville, Texas; and DON SMITH, SPCA area I forester, Shreveport, La.

YARWAY DIGESTER BLOW VALVES with AUTOMATIC LUBRICATION



One of a battery of Yarway Digester Blow Valves, motor-operated, with automatic lubricators, in a large Washington pulp mill.

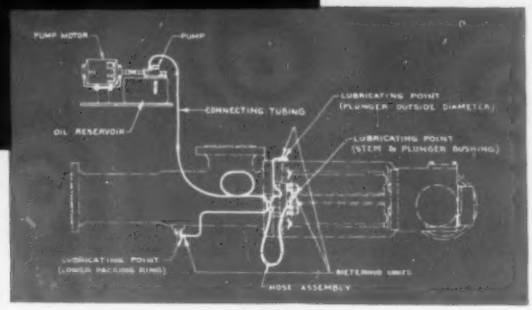


Diagram showing arrangement of Yarway Automatic Lubricator on Yarway Digester Blow Valve.

...help increase production, cut maintenance and save manpower

Automatic lubricators on Yarway Seatless Digester Blow Valves add new cost-saving and labor saving features to digester operation.

Push-button control of these valves also provides automatic lubrication of them at the *right* places . . . at the *right* time. Result—less maintenance, fewer production delays, release of manpower for other productive work.

Reports on low operating cost experiences from pulp mills using Yarway Digester Valves, are impressive, too. One large mill found the resultant *savings in operation and maintenance the first year more than paid for the cost of their new 4 Yarway Digester Valves.*

Yarway Seatless Digester Blow Valves are either motor or hydraulically operated. All are remote controlled—designed for clean, free discharge and tight shut-off.

For full information on Yarway Seatless Digester Blow Valves, write for Bulletin B-441. No obligation.

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YARWAY **DIGESTER BLOW VALVES**

PULP & PAPER

PULPWOOD SECTION

National Container Buys Bahamas Pine

National Container Corp. has acquired cutting rights on 300,000 acres of British Crown timber in the Bahama Islands.

Timber is located on the islands of Grand Bahama and Abaco, and will be shipped about 300 miles northwest to Jacksonville, site of one of National's largest kraft mills and one which is presently undergoing a $25 million expansion program.

National has also been granted a license to use the dock and wood handling area now under construction at Freeport. Certain guaranteed tax benefits also go with the agreement. Timber is almost entirely pine.

The company has also purchased a 437-ft., 3300 ton steel ship, the "Abaco Queen," to transport the timber from Freeport to Jacksonville. National now owns or controls about 800,000 acres of timberland.

Fewer Forest Fires But More Area Burned

The U. S. Forest Service reports 8,160 forest fires on federal and other lands within national forest boundaries during 1955, a drop of more than 20% from the 10,462 during 1954.

Man-caused fires dropped from 5,978 in 1954 to 4,375 in 1955. The area burned, however, increased from 142,253 acres in 1954 to 365,905 in 1955.

The Southern region (N. C., S. C., Ga., Fla., Ala., Miss., Tenn., Ark., La., Okla., and Tex.) reported 116,931 acres burned in 1955 as compared to only 53,255 in 1954

OFF THE PRESS

The 1955 PULPWOOD ANNUAL, edited by the American Pulpwood Association, is ready for distribution. This 64-page ANNUAL contains complete sections on woods training, safety and supervision; pulpwood preparation, handling and hauling; industrial forestry and wood utilization, and pro and con views of the Forest Service of the next 50 years pulpwood supply and demand. For copies ($1.00) write PULPWOOD ANNUAL, 370 Lexington Ave., New York 17, N. Y.

FLYING FLORIDA FIRE FIGHTERS. These four Piper Super Cubs are latest additions to Florida Forest Service. They will fly out of Tallahassee, Panama City, Lake City and Ocala on fire fighting patrols during the bad fire season. In off season they will be used for air surveys of burned and unburned areas and for checking insect and disease damage on large timber tracts. Planes will be equipped with radios for two-way communication in flight.

Speed
Automation
Versatility
Economy

WITH
CONVEYAIR
CHIPVEYOR

Above: Conveyair Chipveyor installation loading chips into car through a lateral swing nozzle, which increases pay load of car by up to 50%, and obviates the necessity for movement of car while loading.

Above: Feeding chips into storage silo at pulp mill.

Below: Feeding chips into bunker. Note cable-suspended Conveyair pipe, eliminating space-consuming supporting structures.

Below: Conveyair Chipveyor installation using stationary towers (also designed for lateral travel as required) loading chips into barges with restricted maneuverability.

Center: The Conveyair Chipveyor feeder, the heart of the installation, receiving chips from screen. (Suitable for screened or unscreened chips.) Complete systems engineered and designed to suit individual requirements. Your enquiries are invited without obligation.

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Should Do in Forests

Responsibilities of management in obtaining maximum utilization was the theme of a talk by Paul M. Dunn, New York technical director of Forestry, St. Regis Paper Co. He cited the growing conversion of forest leftovers into chips, soil conditioners, bark products, molding compounds etc.

He summarized the major problems of forest management as follows:

1. Full protection to all forest lands.

2. Harvesting of defective virgin old-growth stands.

3. Removal of defective cull and old over-story of both good and poor commercial species, especially hardwoods.

4. Utilization of hardwoods in mixed forests where over-cutting of conifers tends toward increasing ratio of hardwoods.

5. Thinning and intermediate cuttings in management of second-growth stands.

6. Regeneration of new stands.

7. Rehabilitation of understocked forest lands—burned, eroded and cutover.

Proper integration of associated forest land uses.

Increases in Wood Trucking

Champion Paper's Carolina Division now gets more than 25% of its pulpwood by truck. Its Canton, N. C., mill buys upwards of 100,000 loads of wood a year from truck wood haulers. Trucking of pulpwood has shown a phenomenal increase in 10 years—from just 7,000 to the present 160,000 cords a year.

New One Man Saw Brings Down 10 ft. dia. Trees

Homelite, 75 Riverdale Ave., Port Chester, N.Y., designed this Model 7-29 chain saw which delivers 7 full hp., yet weighs only 29 lbs. According to the manufacturer, "the new Homelite 7-29 is the most powerful one man chain saw you can own—does top production cutting with minimum down time." The 7-29 is light enough to carry through roughest terrain, powerful enough to bring down big timber or small trees in less time and with less effort than ever before, says Homelite.

SUMNER Chippers

Big, Small or In Between

SUMNER has the distinction of building the largest and the smallest as well as the widest range of chippers, including all accessories . . . regardless of size, output or other woodroom requirements.

BARKERS—CHIPPERS—SCREENS

WOOD HANDLING AND LOG BREAKDOWN MACHINERY

Make Sumner Your Headquarters For Woodroom Machinery

Designers and Builders of Quality Machinery for the Forest Products Industries

ESTABLISHED 1892
SUMNER IRON WORKS
EVERETT WASHINGTON

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1. Face plates cap each half-coupling individually.
2. Four breaking-pins shoulder into slots and rigidly connect each half.
3. Necked centers of breaking-pins fracture at predetermined overload pressure.
4. Motor half can continue to rotate indefinitely.
5. New breaking-pins are easily installed.
1
2
3
4
5

New Fast's Breaking-Pin Jordan Coupling eliminates seizure and overload damage

Fast's Breaking-Pin Jordan Coupling reduces your maintenance costs . . . eliminates expensive shutdowns and production stoppages by protecting expensive equipment.

Fast's Breaking-Pin Jordan Coupling protects both motor and Jordan when the plug is inadvertently drawn too tightly, or when hard foreign matter enters the Jordan and jams the knives. Fast's breaking-pins fail only by torsional overload, never through shaft misalignment. By close control of a specially selected breaking-pin material and laboratory analysis, uniform breaking-pin performance is assured. When your Jordan shaft becomes overloaded or knives jam, the pins break at their calibrated center section. After failure, the two halves physically separate. The breaking-pins cannot fly out but are easily removed and replaced.

Koppers engineers will be glad to analyze your coupling problems, and specify a Fast's Breaking-Pin Jordan Coupling to meet your needs. Available in 9 standard sizes for shaft diameters from 2½ through 7 inches. Discover how you can save maintenance time and costs and avoid profit-consuming delays by writing: KOPPERS COMPANY, INC., Metal Products Division, Fast's Coupling Dept., 2707 Scott Street, Baltimore 3, Maryland.

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Sold With *Service*

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THE ORIGINAL
FAST'S Couplings

1856 ★★★★★

ESTABLISHED 1856

Draper Brothers Company

CANTON · MASSACHUSETTS

To: Our Customers

This year marks the 100th Anniversary of the founding of our Company here in Canton. It is time to pause and do honor to the past – a time to plan for the future.

One hundred years spans many hours of trouble, worry and despair, with other hours of fun and friendship and the joy of doing worthwhile things. To the generations of people who have worked here through these years to bring us to this happy birthday, we are deeply grateful.

And, yet, it is to folks like you to whom we owe the most. Without your faith in us and our products, without your sympathetic understanding of our strengths and our weaknesses, without your trust in our ability to serve, there could have been no anniversary to celebrate.

And, so with a confidence grown strong through your support, we look forward eagerly to our second century. Surrounded by research and engineering institutions and with a source of materials and equipment close at hand, we stand ready to serve you in the years ahead.

DRAPER BROTHERS COMPANY

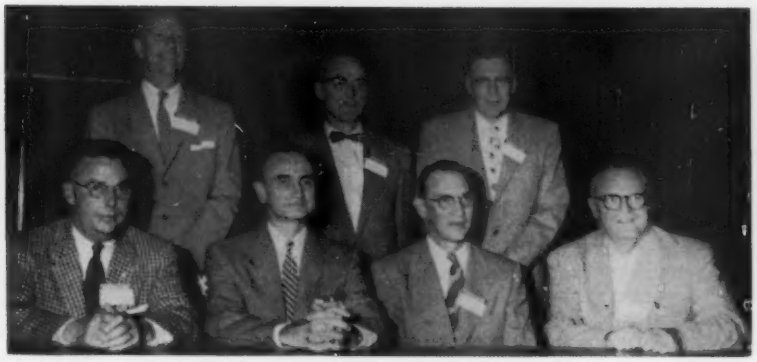
John H. Draper, Jr.

President

1856 Our 100th Anniversary 1956

★★★★★ 1956

CONGRATULATIONS AND BEST WISHES! Incoming Superintendents' President MARTIN J. AUCHTER (l), Charmin Paper Mills, Inc. is congratulated by retiring President HOWARD H. STREET (r), National Vulcanized Fibre Co.



NEW SUPERINTENDENTS' OFFICERS: (l to r, seated) C. IVES GEHRING, 5th Vice President, Oswego Falls Corp.; HOWARD H. STREET, Past President, National Vulcanized Fibre Co.; MARTIN J. AUCHTER, President, Charmin Paper Mills, Inc.; ALBERT E. BACHMANN, 1st Vice President, Missisquoi Corp.; (standing l to r) THOMAS S. COLDEWEY, 4th Vice President, St. Joe Paper Co.; A. C. McCORRY, 3rd Vice President, North Western Pulp & Power Ltd.; and HOWARD E. WEHR, 2nd Vice President, The Mead Corp.

Mill Tour Highlights National Supts. Meeting

Far from the sound and fury of their capacity-straining mills, superintendents stepped out of their "loveable rat race" as one mill man put it, for their 37th annual meeting at the Lake Placid Club, Mirror Lake, deep in New York's Adirondacks.

Here, for four days, some 923 strong (including affiliates and wives), they enjoyed games and sports. They also learned about Olin Mathieson's new process for production of chlorine dioxide at new high efficiency; patterns emerging in labor bargaining for 1956-57; Scott Paper Co's. technical set up; Fraser Co's. ammonia base sulfite pulping at Edmunston, N. B., and how Rice Barton's suction hot press on a Southern linerboard machine has increased production with higher quality. There was also an outstanding talk by Edward Race, British director of Scapa Felt Co.

OPTIMISTIC SPEAKER . . . To dispel any gloom among superintendents, worried whether they were producing too much, Gene Flack, sales counsel and director of advertising for Sunshine Biscuits, Inc., urged them not to believe everything they hear from Washington. Washington bureaucrats are wrong 82% of the time, he stated, adding: "An economist is a financier without money."

"It's impossible to calculate the danger pessimists can cause," said Mr. Flack. He noted that since Pearl Harbor we've had a 25% increase in population, and twenty-one million more families.

"MILL OF TOMORROW" . . . In a feature story in its March 1948 issue and in a follow-up in Oct., 1953, PULP & PAPER called the plant of the Newton Falls Paper Mill, Inc., "A Mill of Tomorrow." It was suggested developments at this mill at Newton Falls, N. Y. would some day become standard in other mills. Much of this has come true, but the Newton Falls management has not stood still. It continues to experiment and develop new equipment.

During the Superintendents' Assn. national meeting they were introduced to a new concept in organized mill tours at Newton Falls. About 300 drove 78 miles each way to visit the mill. Ronald W. Hynes, president, told PULP & PAPER that he had invited all companies with equipment in his mill to send representatives to explain their machinery. As a result many said it was the best organized mill visit they ever made. Another novel step: Complete access to the two 108-in. Waldron Microjet coaters.

PRACTICAL DATA ON AMMONIA . . . What one mill man described as the first practical paper on ammonia base pulping was authored by Marcel Barcelou, assistant mill manager, Fraser Cos., Ltd., Edmundston, N. B. Kept from the convention by an illness, Mr. Barcelou was represented by Geoffrey Wilson, assistant sulfite mill supt.

Key point was that Fraser has effected 25% more pulp production using ammonia. It converted to ammonia base cooking in Nov. 1953.

Fraser's Edmundston mill produces about 350 tons a day of sulfite, 110 tons of bleached kraft (taking unbleached kraft from Newcastle mill), and about 85 tons of groundwood. Blended and unblended pulps are slushed through pipes to the bond and groundwood paper mills of Fraser Paper, Ltd., at Madawaska, Me.

RESULTS OF CONVERSION . . . Here are some results experienced after the conversion to ammonia:

1. Baume dropped about 1.7 units due to lower density of this base as compared to calcium salts.
2. Sulfur consumption dropped 10 lbs. per unbleached ton. Only part of this drop may be attributed to ammonia base as Fraser's experience has been that sulfur consumption can vary 10 lbs. or more per ton for various reasons.
3. Some steam savings resulted from ammonia.
4. Digesters appeared to relieve easier with resultant slightly lower blow pressures.
5. A large increase in blow liquor color was obtained.
6. Contrary to expectations, color did not develop much earlier in the cook. Color, however, changed very slowly near the end of the cook; blow color appeared to be far less critical than with calcium base and cook could be held past normal blow time without apparent adverse effects.
7. Pulp cooked with ammonia base liquor gave lower chlorine numbers under identical cooking conditions.
8. At the same chlorine number, ammonia base liquor gave pulp, having the same dirt content, a viscosity almost double, mullen and tear very slightly higher, and a faster hydrating pulp as indicated by freeness at 40 minutes beating time.
9. Unbleached pulp was also considerably freer from shives.

10. Photoelectric measurements indicated a drop of 2 points brightness of unbleached pulp, but this was undetectable to the eye.

11. No variation in other pulp properties, such as opacity, bulk, etc., could be detected.

12. Under identical conditions, ammonia base pulp appeared to drain better, but generally speaking didn't appear to wash out any better.

13. Ammonia consumption is about 90 lbs. per ton of unbleached pulp.

14. Under similar cooking conditions, failed to find any reduction in chlorine, lime, caustic or steam consumption in bleaching.

HIGHER EFFICIENCY ON ClO_2 . . . Basically, what is the significance of Olin Mathieson Chemical Corp's. new process for production of chlorine dioxide at high efficiency? One mill man explained it this way, "By adding 6 lbs. of sodium chloride to the reactor, you get a substantial increased conversion of chlorate to chlorine dioxide with efficiencies ranging from 95% to 97% vs. 90% in previous systems." This represents a saving of between $6,000 to $8,000 a year per ton day of ClO_2, reported Walter Northgraves of Olin Mathieson, who delivered the paper authored by himself, B. H. Nicolaisen, T. H. Dexter and D. J. Jaszka.

These efficiencies have been effected in Olin's research lab at Niagara Falls and at the Covington, Va. mill of West Virginia Pulp and Paper Co. Mill tests were made between April 21 and 25 so that comparisons could be made after sodium chloride addition.

From 2 to 10 complete series of measurements and analyses were made daily. An increase in efficiency of 5% to 6% was attained in spite of a loss of an average of 3.1% sodium chlorate.

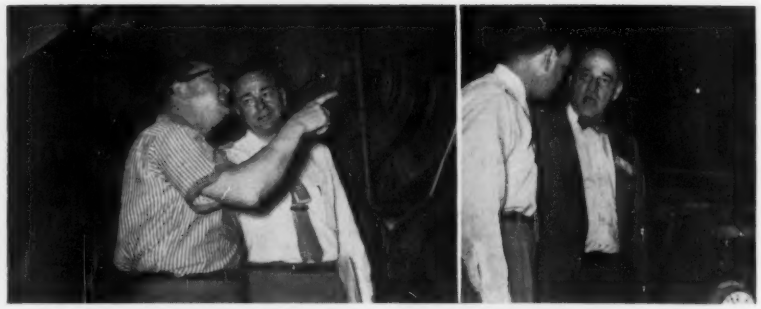
WHAT WE WANT FROM OUR JOB . . . On industrial relations: The principal function of industrial relations is not to make people happy but to conserve industry human resources. Other objectives: to employ qualified people in sufficient numbers to meet requirements of the company; to create and maintain a healthy climate in the organization to insure retention and development of people; to assist the individual against layoffs and sickness and old age.

"You and I make certain demands upon our job. We want it to do certain things for us. We hope to find through our work fulfillment of our aspirations. On the other hand, a job makes certain demands; many times these demands do not coincide."

LABOR PATTERNS . . . Patterns emerging and overall trends in collective bargaining were cited: This year, 1956 is a wage year vs. 1955, a fringe year. . . . Emphasis is on direct monetary gains. . . . The steel settlement will have a tremendous effect on labor demands.

Here's what some industries are getting (in 1955 this ranged from 5% to 8% in all industries): 11¢ this year

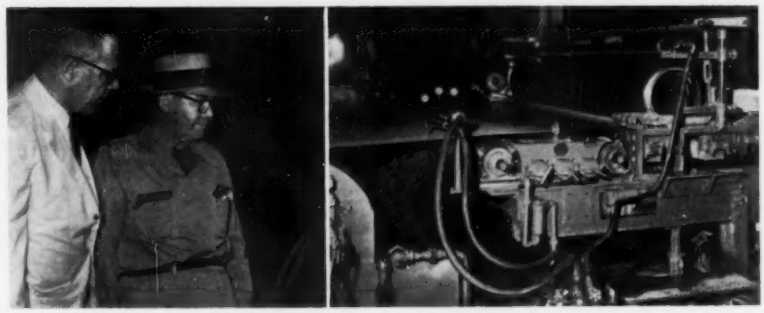
TALKING ABOUT AMMONIA BASE PULPING (l to r), GEOFFREY WILSON, Asst. Sulfite Mill Supt., Fraser Cos., Ltd., Edmundston, N.B.; HERB HOPKINS, Olin Mathieson Chemical Corp.; and JOHN "CY" TAYLOR, Assistant Mill Supt., Fraser's Atholville, N.B. mill.



Equipment Men Show "Wares" at Newton Falls

POINTING TO A HOOD, NATURALLY (left), PAUL GOLDNER, Ross Engineering, shows JACK SAVAGE (right), of Crown Zellerbach, some drying features of Ross hood on No. 2 paper machine at Newton Falls. **QUESTION ABOUT SUCTION COUCH ROLL** (right) is asked of DICK SMITH (left), Beloit Iron Works, by CLARENCE LINEBAUGH (right), of Schmidt & Ault Co.

WALDRON MICROJET COATER IN ACTION (left) is observed by HAROLD NELSON (left), Ecusta Paper Corp., DICK MARKOWITZ (middle), of Waldron, and TOM RAMSEY (right), also of Ecusta. Coater was operating on 50 lb. stock applying 15 lbs. coating at 475 fpm. **STICKLE DRAINAGE CONTROL** (right) is explained to RUDY GREEP (middle), Prod. Mgr., S. D. Warren Co. by (l and r) ROGER STICKLE and JIM McQUEARY, Stickle Steam Specialties Co.



IMPRESSED SUPERINTENDENT (left). SAM ORTON, Orton Corp., seems to have impressed CARL SMITH, Gaylord Div., Crown Zellerbach, with his Evans Rotabelt unit. **AND HERE'S WHAT WAS SO IMPRESSIVE** (right). Look how the Rotabelt unit removes water from stock on wires.

in aircraft, 7¢ in 1957; 12¢ in garment industry; railroads, 14¢; oil 15¢; cement, 18¢. Unions don't seem as interested in GAW. Shift premiums going up in some instances; demands for 3 weeks vacations for 15-year employes; wage increase for length of service; time spent on jury duty to be counted as time worked for computing overtime (for instance, if a man works on Saturday; total time worked would include time spent on jury duty). These are only isolated examples of what some union leaders are bargaining for.

One speaker said that the men across the bargaining table are increasingly better informed on trends and can read your financial statements well.

On community relations, Roy Goodlander, New York & Pennsylvania Co., told the superintendents that community relations begin but do not stop with their employes.

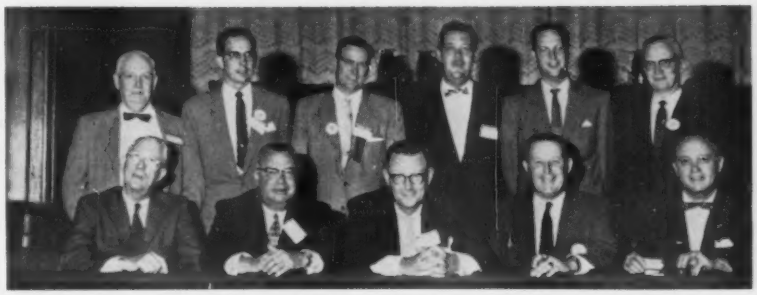
LOOK AT PROBLEMS OBJECTIVELY . . . Chairman of the kraft board Fourdrinier session, Tom S. Coldewey, St. Joe Paper Co., prefaced the talks with some observations: what we have to do is look at some of these problems and we have to look at them objectively. "Is there anything we can do to help ourselves?" he asked. He cited the paper by Jim Majors, West Virginia Pulp and Paper Co., Charleston, S. C., who detailed their "growing pains with suction couch rolls."

West Virginia picked out a problem, analyzed it and did something about it, explained Mr. Coldewey. They took an abstract problem, one that everybody in the industry has, assumed some recommendations and some answers. Machine manufacturers are not going to give us all the answers, he flatly stated.

Mr. Majors discussed the rash of premature failures they experienced on Fourdrinier wires on their No. 1 machine which produces unbleached kraft linerboard, known as Improved Surface Liner, or "ISL" board. This machine takes a 246-in. wire and trims 225-in. and can make 42 lb. board at speeds up to 1,560 fpm.

Trouble started in March 1955 when the back edge of the wire was starting to curl upwards on its return run; followed by extreme "hop" of the stock on the wire from forming board to flat boxes. This trouble continued for 2½ months.

After making some 16 checks on various possible causes, they discovered that when lifting the lumpbreaker roll from the couch in operation, the center of the lumpbreaker roll left the surface of the sheet before the ends of the roll. It looked as though the couch roll shell was deflecting under vacuum loading. A check disclosed that the shell deflected in the middle .060 in. due to vacuum loading and at the end of the suction area, 0.004 in.



INDUSTRIAL AFFILIATES COMMITTEE: (l to r seated) RALPH E. BRIGGS, Draper Bros. Co.; MILTON M. BIXBY, Chairman, Hercules Powder Co.; JOHN D. DICKSON, JR., 1st Vice Chairman, Stowe-Woodward, Inc.; GEORGE H. SPENCER, Torrington Co.; OLIN W. CALLIGHAN, Minerals & Chemicals Corp. of America; (standing l to r) HARRY E. WESTON, Association Sec.-Treas.; A. C. "TONY" SCHETTLER, Reliance Elec. & Eng. Co.; GENE WARD, Ex-Officio, Cameron Machine Co.; H. KENNETH CARTER, DuPont Co.; CHARLES W. CAIRNS, Dow Chemical Co.; and CHARLES B. MUZZY, E. D. Jones Co. Photo by PULP & PAPER.

Although West Virginia doesn't believe it has anything that approaches what it desires in couch roll design, it is considering several possibilities:

1. Redesign suction boxes to decrease this deflection in the vacuum area of the couch shell.
2. Use means other than couch roll for driving.
3. Use a wire-turning roll beyond the couch roll.

SUCTION HOT PRESS FOR LINERBOARD . . . An "unbiased and uncensored" manufacturer's paper on the installation of a suction hot press on a "Southern linerboard machine" was given by H. B. "Whitey" Wilson, Rice Barton.

This suction hot press arrangement, explained Mr. Wilson, has increased production averages on linerboard 14% and improved quality tests approximately 7%. Previous average running speed on 42 lb. linerboard was 1,190 fpm. Since the Rice Barton hot press installation, average speed on same sheet is 1,350. Largest production increase has been on 69 lb. sheet, which used to be run at 630 fpm and now averages 745 fpm.

Another important factor, cites Mr. Wilson, is the much higher quality of the board. Still another is that approximately 25% less steam per ton of board is used than before.

There are no shadow or shell marks on the board, stressed Mr. Wilson, nor indication that such a mark will appear.

Regarding caliper, the mill is operating the hot suction press at 400 lb. per lineal inch pressure on all grades of board except 26 lb., 28 lb., and 33 lb. A caliper loss of ⅛ pt. resulted when they attempted to use the hot press on 26 lb. However, no appreciable caliper loss is noted on any other grades of board.

Some questions asked of Charles McCarthy, vice president and mill manager:

Q. Since a caliper loss of ⅛ pt. is of such consequence, how can you afford to lose caliper? A. On kraft linerboard, caliper is important only on 9-pt; on the other grades it's floating. Anytime you put in a smoothing press you'll get a much more severe loss in caliper on a lighter sheet. On 9-pt. you lose a full ⅛ pt. We did lose caliper when we installed it. All our box shippers specify so many rolls of a certain size that we now have to overrun their orders.

Q. On the hot press did you run into trouble on high temperature? A. We did go to special felts because of location rather than temperature. Get much more finish than a smoothing press where it is. We are scared of shadow marks and did put on a heavier felt to get away from shadows.

Mr. McCarthy also said that they have found out a good many things since the installation, all in favor of the hot press.

HOSTS AND HOSTED at guided mill tour of Newton Falls Paper Mill, Inc. are (l to r) RONALD HYNES, President, Newton Falls Paper Mill, Inc.; DON MONTVILLE, Black-Clawson Co.; EMMETT HODGE, Newton Falls, and RAY L. BARTON, Michigan Paper Co.

About People. . . Notes from Lake Placid

From a PULP & PAPER editor's notebook at the Superintendents National Convention at Lake Placid, N.Y.:

JACK O'CONNELL, former national prexy of the "Supers" came to see some of his old friends. He'll be 78 Aug. 29 and he entered the industry in 1894. He said the meetings were "family affairs; a chance to take a day off." . . . **CARL MAGNUS,** superintendent at J&J Rogers Co., Au Sable Forks, N.Y., won an electric clock. . . . **JOHN F. LANGMAID Jr.,** S. D. Warren Co., guessed at 1,221 pennies in the Penny Pot and sure enough that's what was in it. But he wasn't present for the drawing and didn't get the prize. . . . Starring like veteran troopers, the Penjerdel Paper Peddlers gave a brilliant "command performance" at the behest of President **HOWARD STREET.**

JOHN "CY" TAYLOR, assistant general supt. at Fraser's Atholville, N.B. mill, drove down with his wife. **MARCEL BARCELOU,** assistant mill manager at Fraser's Edmunston, N.B. mill was scheduled to give a paper on their ammonia base sulfite pulping but became ill just before leaving. **GOEFF WILSON,** assistant sulfite supt., took over and did a fine job. Goeff's wife, the former Jean Montgomery, gave birth to their first, a boy, Robert, a few months back.

GRENVILLE HOLDEN, president of Huyck Felts, told P&P how the slogan "I Luyck Huyck" started. One of his friends read the company's annual report and wrote on it, "My slogan for this election year will be I Luyck Huyck." . . . **NORM WEIL,** W. S. Tyler, was literally bursting with pride as he introduced **JACK LAVELLE,** scout for the N.Y. Giants, who talked about "loyalty to yourself, to your firm, boss, industry and friends."

WES CORBIN, Black-Clawson, who was scheduled to review recent developments on high speed Fourdriniers, was in the hospital and just before press time a check at B-C reports he's doing much better. Substituting for Mr. Corbin was **ALAN HYER,** who did a fine job. A Scott Paper Co. man rose to recall Mr. Corbin was intercollegiate wrestling champ at Cornell and was one of Scott's "most brilliant engineers" . . . One lady visitor to Newton Falls during the plant tour remarked, "My, those backtenders are dressing fancy these days." She was of course alluding to the suppliers standing "guard" by their machinery.

JOE THOMAS, associate research director at S.D. Warren Co., who missed his first TAPPI coating convention in many years, was reported proud father of a boy. Mr. & Mrs. **RUDY GREEP,** (he is Warren Co. production manager) are happy with little Margaret Allen, their second-born, who came along on Apr. 11. Mr. and Mrs. **EVERETT P. INGALLS** (he is director and mill manager at Cumberland Me., for S. D. Warren) were on a 10-week European trip.

CLAUDE BOS, St. Regis Paper Co., Kalamazoo, Mich., won golf balls and made a "trade" with **ERIC NORMAN** of B. F. Perkins, who won a golf bag for low gross. He forgot to tell Eric about it, however, but while Claude was chuckling to himself, Eric had the last laugh by "borrowing" back the bag—and golf balls, too. Right after the convention Mr. Norman took off for Western Michigan College to take in lectures on coating . . .

PHIL GLATFELTER, III, president of P. H. Glatfelter Co., and his father, **PHILIP II,** were reported boning up for their new paper mill start up by some expert fishing in the vicinity of Miami, Fla. . . . **DAVID BROWN** of Penick & Ford claims the convention wasn't too much for him, but he was only back a week or so before he decided to take a vacation in Sweden. . . . Mr. and Mrs. **AL BACHMANN,** (he's president of Missisquoi Corp.) celebrated their 25th wedding anniversary. . . . **EDWARD RACE,** director of Scapa Felts, and **DONALD BRASS,** president of the American Scapa unit, flew down after the convention to Waycross, Ga. to see their new plant. . . . **RALPH BRIGGS** of Draper Bros. was busy receiving congrats from fellow-conventioneers, on his company's 100th anniversary. He had **BILL WENDELL** along, Draper's new sales engineer, formerly at Fraser Paper, Ltd's. Madawaska, Me. mill.

GENE WARD introduced his new boss, **WILSON M. COMPTON, Jr.,** now president of Cameron Machine Co., whose father was one of the Compton brothers of science and education fame. . . . Also receiving congratulations was **BILL METCALF,** newly elected vice president of Ross Engineering Co. He and **OWEN "BUD" SMITH** drove up in a new car . . **JACK** and **JULIE CHANDLER** vacationed in Berlin, N.H., after the convention. Also up from the South was **BOB DAVIS** of Brandon Sales. They are now handling Tidland Machine line. . . .

A HAPPY MOMENT as GRACE WARD admires Past Chairman's Jewel given to husband GENE WARD, Cameron Machine Co. Mr. Ward was Chairman of the Industrial Affiliates of the American Pulp & Paper Mill Supts'. Assn.

OPERATION SUPERINTENDENT'S AIRLIFT was little known but interesting sidelight of convention. Involved in labor negotiations for his company in Columbus, O., GLEN "TINY" RENEGAR, (middle), Container Corp. of America, had little hope of getting to "emcee" Penjerdel Paper Peddlers Breakfast Show. WALTER MOREHOUSE (right), Nopco Chemical Co., heard that Lockport Felt Co.'s plane was in the area and contacted Lockport Sales Manager, RICHARD BUCKLEY, (left), who arranged for plane to pick up Mr. Renegar, fly him to Lake Placid for show and right back again after performance.

ENJOYING ADIRONDACK LOCALE during the Superintendents' Convention were Mr. and Mrs. PHIL BUDD, Northwest Paper Co.

DON'T THEY LOOK RELAXED? Mr. and Mrs. BILL DARMSTADT, Babcock & Wilcox Co., pose for PULP & PAPER at Lake Placid.

COME TO THE COUNTY FAIR. ANNE KINGSTON (her father is paper mill Supt., Hammermill Paper Co.) ties bandana on Mrs. WHEELAND as husband, HOYT WHEELAND, of Mead Corp. waits his turn.

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Why? First, because this chain is specially designed for abrasive, sliding, heavy-load use. It is a steel fabricated chain, made from toughest steel, using the latest fabricating methods and hardening processes to insure *extra* quality, strength and stamina.

Next, this chain is precision made to last longer and give smooth, efficient sprocket action. Lastly, this chain saves valuable production time with a simple 3-Diameter Pin that makes assembly and disassembly fast and easy.

Even if you are satisfied with the chain you now use, chances are Rex Chabelco can give you longer service at lower cost. For those really tough conveying jobs, investigate Rex Chabelco.

Rex Chabelco Steel Conveyor Chain. Average ultimate strengths range from 25,000 to 100,000 pounds.

- ***Matched, hardened wearing surfaces*** **eliminate weak spots ... give you a tough, long-lasting, trouble-free chain.**
- ***3-Diameter Pin*** **makes assembly and disassembly quick and easy — cuts down-time and repair costs to an absolute minimum.**
- ***Heavy-duty, steel-fabricated*** **design and construction. Resists the severe conditions of dust, dirt or shock loads.**
- ***Precision made*** **to last longer, give more efficient sprocket action. Available with straight or offset side bars.**

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LEADERSHIP ... through creative engineering

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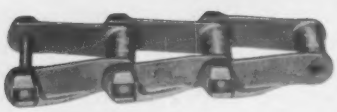
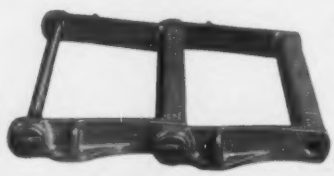
• Here, from the *complete* line of CHAIN Belt products you will find the answer to your power transmission, conveying or elevating problems. Not only will you find the exact chain, idler or bearing to fit your work — you will find the highest quality and dependability . . . quality built on over half a century's experience supplying the forest products industry.

Carefully selected metals . . . skillful hardening or heat-treatment . . . experienced workmanship and design . . . combine to produce the finest products — products that give you longer service, reduce down-time and cut maintenance costs. Whatever your wood handling problem, CHAIN Belt will give you the cost-cutting answers.



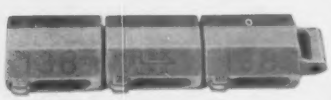
Rex H-Type Mill Chain — Most popular of all sawmill size chains for conveyor use. A tough, versatile chain with special wearing shoes for sliding.



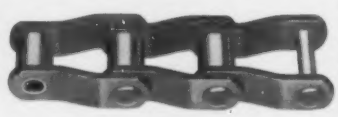
Rex H-Type Mill Conveyor Chains—Used for conveying slabs, chips, sawdust and refuse. Heavy, one-piece links with thick barrel provide long wear and good scraping action.

Rex Durobar and Combination Chains — A proven standard for wood handling service. Eccentric barrel of Durobar chain reduces wear on both chain and sprockets.

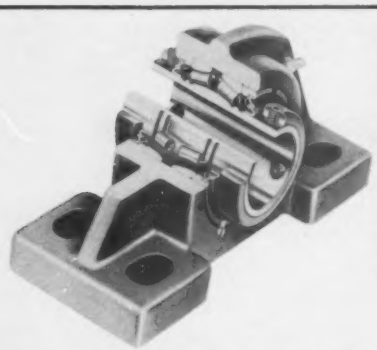
Rex Roller Drive Chain—The ultimate in high-speed drive chain. Highly flexible to withstand heavy shock loads. Precision-made for longest life. Available in single or multiple strands for a variety of drive uses.



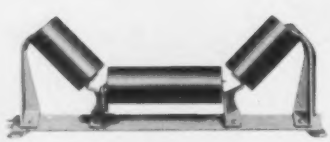
Rex Roof-Top Transfer Chains — Primarily a green chain, but frequently found in sawmill transfer service. Choice of peaked or flat roof-top design. Flat roof generally used for handling finished lumber as it will not score.



Rex Chabelco Chains — For severe conveyor service, Rex Chabelco Chains are first choice. Available in both straight and offset side bar construction. Also special Chabelco Chains designed for log deck, log haul-up, trimmer, etc. service.



Shafer Self-Aligning Roller Bearings — These bearings combine the best advantages of the roller and the ball by using concave rollers operating between convex races. Their stamina and dependability have been proved under extreme load conditions found in the lumber and pulp industries. Their reserve capacity is your assurance of longest life and continuous peak performance.



Rex Style No. 46 Troughing Idler — Specially designed for handling wood chips. Concentrating rolls of the idler are sloped at 45° to provide exceptional carrying capacity. This feature permits loading of chips close to the belt edge without spillage and gives the belt additional carrying capacity when compared to the conventional 20° sloped idlers.

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☐ I would like to discuss my wood handling problems with a CHAIN Belt District Sales Engineer.

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Company.....

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How Spaulding Is Upgrading

A New Design for Pulp Drying

• Spaulding Pulp and Paper Co., Newberg, Ore., has launched an expansion program which aims to increase its unbleached sulfite pulp production from 120 to at least 150 tons a day (90% bone dry) when a $1,300,000 program is completed in about November. Actual ultimate potential capacity of new equipment will be 200 tons a day.

A new modern pulp drying machine installation, 156 in. wide, will have a daily producing capacity of 200 tons 90% air dry. The 36 ft. long wet end will be followed by a 110 ft. long dryer. Also there will be a complete new layout for finishing and preparing pulp for shipment. A new concrete and steel building will house the installations. A. H. Lundberg, chemical engineer, Seattle, has assisted in design and planning of the entire machine.

This expansion at Newberg was preceded in recent years by the new woodroom installation and addition of a 13-ton digester, which along with the new pulp mill and finishing additions will enable the boost in production, and at the same time, an improvement in quality of the pulp.

BETTER DRYING IS EXPECTED . . . Big factor involved in this improvement at Spaulding is the better drying job that is foreseen. It is calculated that the improved drying will save money in transportation costs, especially since the recent inter-state freight increase of 6%. The air dry pulp shipped to mills which are owners of Spaulding and to Perkins-Goodwin Co. for market, will be 96% dry instead of 89%. About 50,000 tons a year will be produced.

HOW WET END IS TO BE EQUIPPED . . . The wet end of a new type of pulp drying machine installation will be supplied by Sandy Hill Iron & Brass Works, and is a Kamyr feltless machine consisting of one Kamyr suction mold and vat section with a working width of 156 in. The suction mold will be of fabricated construction, with Type 316 stainless steel wherever stock comes into contact with the metal, and the balance of mild steel. This mold will be 79 in. dia. and 156 in. working width. The vat plate casing will be of stainless clad mild steel and cast iron.

This section will be complete with pre-press, press, couch and takeoff rolls. All these rolls, as well as the mold, will be carried in anti-friction bearings.

The pre-press, press and couch rolls will be pneumatically loaded with controls.

TWO FELTLESS PRESSES . . . There will be two H-800 Kamyr Feltless Presses, one for the first press position and one for the second. These press sections will be Kamyr's latest design, with fabricated steel framing, steel press arms, pneumatic loading with controls, cast iron grooved press rolls with steel journals, and a working width of 156 in.

Sandy Hill will furnish two 48 in. dia. by 156 in. working width pre-dryers complete with all necessary steam joints, lead rolls and fabricated steel framing. Pre-dryers follow the feltless presses.

Auxiliary equipment includes Sandy Hill fabricated Type 304 stainless steel mixing box equipped with a Mixing Equipment Co. "Lightnin" mixer. Also a fabricated Type 304 stainless steel Sandy Hill headbox with similar type stainless steel air and water separator. A DeZurik consistency control, a Stickles white water heater, a white water pump, stock pump and Nash vacuum pump are also among auxiliaries.

Overall length of the wet end is about 36 ft.

EQUIPMENT FOR DRY END AND FINISHING . . . The dryer section will be supplied by Mr. Lundberg. It will be a forced air circulating type dryer with mechanical pulp conveyors of new and improved design. Dryer coils are being made by Dominion Bridge Co. Ltd., of Montreal, and fans by Canada Buffalo Forge Co.

The drying machine will be followed by a Lamb-Grays Harbor cutter and layboy and all new conveying equipment as well as a new 1000-ton Washington Iron Works baling press.

A so-called "floating tube" conveyor, cross member design, will permit maximum operating speeds where required, up to 200 to 250 fpm, and conveyor maintenance (previously a problem) is expected to be reduced to a minimum. The working width of the machine will be 156 in., and theoretical capacity of the dryer will be 200 short tons of pulp per 24 hours, 90% bone dry. The machine will be equipped with full heat recovery and the steam consumption will be less than one ton steam per ton of 90% bone dry pulp.

The over-all length of the dry end is about 110 ft.

The complete drying machine (wet end and dryer) will be driven by a General Electric sectional electric drive. General Electric is furnishing a complete unit including one speed variator; one power unit; one motor generator set with belt-driven exciter; one fan and air filter system; one full voltage starter for M.G. set induction drive motor, one magnetic control panel complete with required contractors, pre-set speed starting of dc motors and the various needed adjustment features; six drive motors; totally enclosed fan-cooled for the smaller sizes, and blower-cooled for the larger sizes. First press, pre-dryers, second press and cutter are by Sandy Hill.

J. C. Compton, who is a well-known contractor of McMinnville, Ore., and leading industrialist of that state, is president of Spaulding Pulp & Paper Co. Paul Scallan, vice president and Midwest manager for Perkins-Goodwin Co., is also a vice president of Spaulding.

WILSON M. COMPTON, JR., new President of 50-year old Cameron Machine Co. He heads group which recently purchased company from MRS. JAMES A. CAMERON, widow of the founder. JACOB SCHAPIRO, with Cameron 40 years, and Chairman and Acting President, will continue as a Director.
Mr. Compton was formerly with the U.S. Plywood Corp.; Reichhold Chemicals, Inc., and is a graduate of M.I.T. and Wooster College. He is son of one of three famous Compton brothers of science and educational fame. His father was President of Washington State College.

For Water and Waste Work, Ten Organizations Unite

Ten organizations, including TAPPI, have become charter members of a new Joint Committee on Uniformity of Methods of Water Examination. The vice chairman is from this industry, Arthur Thurn of Champion Paper & Fibre Co.

The committee will prepare and publish for general distribution water examination methods which are in general use.

How New Machine Improves Felt Joining

By S. FALLEK*

● It is important that papermakers' felts be uniform throughout their length and have a high degree of wearability built into them. F. C. Huyck & Sons has taken a significant step toward insuring uniformity and long life by designing and developing a new machine for eliminating tight yarns in the critical joining area.

The function of papermakers' felts is to carry pulp stock, remove moisture and impart finish during the process of converting pulp to paper.

Every felt is manufactured to individual specifications with respect to dimensions, finish, porosity and other physical properties. They are usually woven as a flat fabric of desired length. Ends of this flat fabric are then joined by hand to achieve the endless construction in much the same manner as "French weaving" is done by suit menders. Lengthwise, or warp yarns from each end must be individually drawn into the other end of the fabric and interwoven with such skill as to insure that no evidence of the process is visible upon completion.

Individual handling of each yarn creates a problem since some may be pulled into the fabric more tightly than others. This unevenness might result in tight yarns in the joining area and could shorten the working life of the felt.

The procedure employed conventionally for evening tensions is performed before fulling, or finishing, the felt and consists of placing the endless woven belt around the two widely separated parallel cylinders customarily used for drying. One is fixed in position; the other is moved on a track away from it. The movable roll is slowly driven away from the fixed one with the objective of developing maximum stress in the tight yarns, causing them to slip in the fabric, and in this manner equalizing all warp yarn tensions.

This method has proven unsatisfactory since the felt often stretches before tight ends respond as planned. Then, if excessive tension is employed, the stresses developed, supplemented by felt weight, can cause the felt to come apart at the joining.

DESIGN OF NEW MACHINE . . . A Joining-Equalizer machine has been designed by F. C. Huyck & Son's engineers to provide a solution to this problem. Analysis of requirements of a suitable design defined them as follows:

1) Means for applying tension of sufficient magnitude and at a controlled rate;

2) Provision for concentrating force-application and stretching in the joining area;

3) Accurate alignment of warp and filling yarns during stretching;

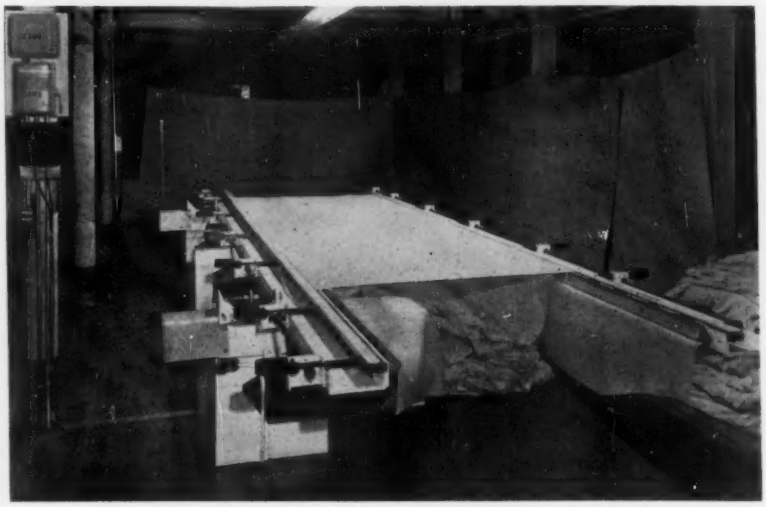
4) Instrumentation for accurately determining proper and safe stress and strain limits.

The machine itself is composed of a heavy welded and bolted structural steel frame which supports two opposing channels. These are separated by a distance approximately the width of the widest joining area normally encountered. One channel is fixed to the frame while the other is free to move away from the first when powered by a large motor-driven screw at each end. Each channel carries a specially designed pneumatic clamp for gripping the fabric securely without danger of injury. A row of alignment pins at each clamp functions as a guide to the operator in mounting the felt.

Two Taylor volumetric load cells are incorporated in the movable-clamp assembly to provide continuous reading of tension at all times during the loading cycle. A linear calibrating scale indicates amount of strain, or stretch.

After the felt is joined and before fulling, it is placed in the machine so that opposite sides of the joining are gripped in the two opposing jaws. The motor then is energized to drive the movable jaw slowly away from the fixed one, transmitting the tension force through the Taylor load cells. When a predetermined reading of tension is reached, the operator stops the motor and carefully examines the fabric across its full width, individually and manually relieving tightness that may not already have been eliminated in any yarn. At the same time, the entire joining area is inspected to insure that no defects exist before the felt passes on to the finishing department.

Experience has proven that the machine permits more complete and better controlled stretching than has heretofore been possible. This results in more uniform fabric in the critical joining area so felts may be expected to operate more uniformly and give maximum life.



SERVING PAPERMAKERS. This Joining-Equalizer machine is designed to eliminate tight yarns in critical joining area. It was developed by F. C. Huyck & Sons, Rensselaer, N.Y.

*Mr. Fallek is equipment engineer with F. C. Huyck & Sons, Rensselaer, N. Y.

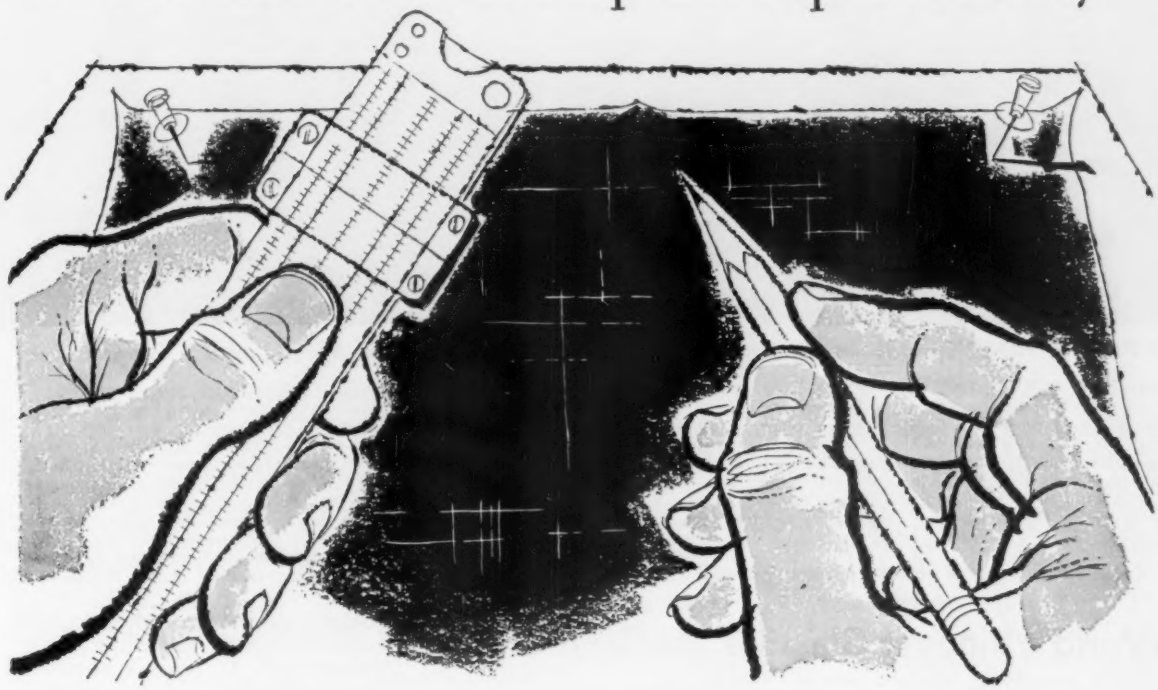
Bauer Bros. to Build New Plant Facilities

The Bauer Bros. Co. has acquired 32 acres, four miles northwest of downtown Springfield, O., at Baker Road and Upper Valley Pike, for future expansion, says J. C. Shouvlin, president. Meanwhile, its new Canadian plant starts up this year.

Bauer's facilities and general machinery division, as well as laboratory and general office facilities will be moved there in the next five years, providing general economic and operating conditions conform to the pattern of past years.

Plans for 1956 call for a first unit of 35,000 sq. ft. for a completely new $500,000 grinding plate division for complete electric alloy metals preparation and finishing equipment, twice the size of the present division.

The Experienced Hands of Pritchard Are Available to the Pulp and Paper Industry



More than twenty-five years ago, J. F. Pritchard & Co. began applying its design and construction know-how and techniques to specialized industries. Today, Pritchard is a name that has the confidence of many industries, including the gas, power, petroleum and chemical industries.

Pritchard also makes available to the pulp and paper industry the same design, engineering and construction skills that have enabled Pritchard to become "Industry's Partner for Progress."

On your next expansion or remodeling or new plant project, your first step in the right direction will be to consult with Pritchard.

INDUSTRY'S PARTNER FOR PROGRESS
SERVING THE GAS, POWER, PETROLEUM CHEMICAL, PULP, AND PAPER INDUSTRIES

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A PULP & PAPER Special—a Picture of Pacific Coast Negotiators who Agreed on 6% Wage Boost

BARGAIN AGREEMENT . . . As they have been doing for many years, management and labor representatives on the Pacific Coast recently held their annual wage negotiations in Portland, Ore. After two weeks of meetings, they agreed to a one year contract for an across the board wage increase of 6% (an average 12.3 cents an hour) for workers in 41 mills in California, Oregon and Washington. A 4th vacation week for 25 year employes and increased medical coverage also were approved.

Union delegates are on left side of picture (splitting it down the middle) and management delegates are on the right side.

At far end of the head tables are five leading spokesmen. Starting with man at left (all face camera), they are: I. D. ISAACSON, Vice Pres. of Pulp, Sulfite and Paper Mills Workers; AL E. BROWN, V.P. of Paper Makers union; JOHN SHERMAN, V.P. of PSPMW; S. W. GRIMES, Secy. and Managing Director, Pac. Coast Assn. of Pulp & Paper Mfrs., and R. S. WERTHEIMER, Pres. of the association and Vice Pres. and Gen. Mgr. of Longview Fibre Co. Mr. Sherman and Mr. Grimes were Co-Chairmen of the negotiations. Continuing clockwise around the head tables, beginning to right of Mr. Wertheimer

World's Biggest Glassine Machine Starts

The new R-W Paper Co. plant, built at Longview, Wash., as joint enterprise of Weyerhaeuser Timber Co. and Rhinelander Paper Co. (the latter now a subsidiary of St. Regis Paper Co.) for producing glassine and greaseproof papers, went into operation June 13. It was built to serve the Pacific Coast's rising demand for protective packaging papers used principally in the retail manufacturing of foods.

Folke Becker, president of R-W, is chairman of Rhinelander Paper; Vice Pres. Howard W. Morgan is vice president of Weyerhaeuser; George S. Long, Jr. and H. E. Nelson, Weyerhaeuser executives, are secretary and treasurer, respectively, of R-W.

According to Res. Mgr. Robert E. Harper, this is the most modern mill in the country for manufacture of glassine and greaseproof papers and has the world's largest machine (186 in.) for the manufacture of these specialty papers. It's three inches wider than the "Big Swede" at Rhinelander.

The R-W mill, located adjacent to Weyerhaeuser's Longview pulp mill from which it draws woodpulp in slush form, has productive capacity of around 14,000 tons of paper annually. Equipment and process design, according to Mr. Harper, embodies the latest in engineering and quality control features. Rhinelander, largest U. S. producer of glassine and greaseproof papers, brings to the cooperative venture long experience in producing and marketing these high-grade products. That firm's engineering staff designed the mill process and equipment installation. Weyerhaeuser engineers designed the paper mill building and the company made additions to its own mill facilities so as to supply R-W with glassine type pulps without affecting its present production of market woodpulp. Weyerhaeuser also provides filtered water, steam and electric power to operate the paper mill.

R-W key personnel includes Sales Mgr. H. W. Hayward, Chief Accountant G. E. Rouse, Plant Engr. R. J. Musgrove and Chief Chemist Richard Nimtz.

Prime production components: 186-in. Beloit Fourdrinier machine with 100-ft. wire, differential drive, 45 paper dryers, 14 felt dryers and 4 presses; 4 E. D. Jones & Sons-Bertram beaters, 2 E. D. Jones refiners, 2 Morden Stockmakers, Bauer Centri-Cleaners, machine calender, center-wind reel, 2 Appleton Machine Co. 16-roll supercalenders (72, 83-in. widths), 2 Cameron rewinders and a Cameron machine winder, Moore & White cutter, and Harris-Seybold trimmer.

Coast Group Elects

R. S. Wertheimer, vice pres. and res. mgr., Longview Fibre Co., has been re-elected president of Pacific Coast Assn. of Pulp and Paper Manufacturers. Others elected: Vice pres., R. O. Hunt, vice pres., Crown Zellerbach Corp.; vice pres., Howard Morgan, vice pres., Weyerhaueser Timber Co.; treas., S. J. Robinson, vice pres. and gen. mgr., Publishers' Paper Co.; secy and managing director, S. W. Grimes.

A. R. Heron, Crown Z vice pres., is due to retire from active service this year. For years he had been exec. vice pres. of the association. Because of his impending retirement Mr. Grimes became managing director as well as permanent secretary.

(at far righthand corner), other negotiators are:

RAY E. BAKER, Weyerhaeuser Timber Co.; REED O. HUNT, Crown Zellerbach Corp.; D. O. BOWMAN, Crown Zellerbach Corp.; P. COLEMAN, Scott Paper Co.; N. F. ROBERTSON, West Tacoma Newsprint Co.; D. F. McCALL, Simpson Paper Co.; ROBERT E. BUNDY, Fibreboard Products, Inc.; G. W. BEARDMORE, Potlatch Forests, Inc.; L. A. COMBS, California Container Corp.; LYALL TRACY, Rayonier, Inc.; H. L. WOLLENBERG, Longview Fibre Co.; LAWSON TURCOTTE, Puget Sound Pulp & Timber Co.; Mr. HOLSMAN, Recorder;

R. HETHERINGTON, IBofPS&PMW; J. F. TEERIN, IBofPM; O. ROBERTSON, IBofPM; J. EYER, IBofPS&PMW; R. ANDERSON, IBofPM; M. F. RANDALL, IBofPS&PMW; R. VICTOR, IBofPS&PMW; H. ADAIR, IBofPM; C. TODD, IBofPM; T. SWIFT, IBofPS&PMW; O. PARKER, IBofPS&-PMW; C. A. PRICE, IBofPS&PMW; W. E. RIGGS, IBofPMW; W. T. PAULING, IBofPS&MW; E. M. TUBBS, IBofPM; R. D. BRADFORD, IBofPS&PMW; and A. W. HANNAFORD, IBofPM.

New Odor Control Plant at Potlatch

Potlatch Forests, Inc., has arranged with the British Columbia Research Council of Vancouver, B. C., for installation of equipment designed to reduce pulp mill odors from the company's pulp and paper operation in Lewiston, Ida., says William P. Davis, president and general manager of PFI.

PFI engineers visited a plant of this type in British Columbia and, since that time, have been working on a similar design for Lewiston, Mr. Davis said. As reported in PULP & PAPER, MacMillan & Bloedel Ltd. has been using the process in British Columbia.

In 1952 Potlatch Forests, Inc. installed an absorption tower designed by PFI engineers to reduce the odors from the gases relieved during cooking and evaporating processes. The British Columbia process is designed to greatly reduce odors, in addition, from the chemical recovery process.

The process involves oxidation of the black liquor prior to burning in the recovery furnaces. Oxidation takes place in a series of 32-ft. towers. The weak black liquor, separated from wood fibers at the washers, is brought to the towers and enters at the top. It is distributed over patterned sheets of a special cement-asbestos material. Air is forced into the tower tops and oxidation takes place while the liquor and air travel downward over the sheets. The air is vented from the bottom of the tower and the oxidized black liquor is pumped to the evaporators and from there to the recovery furnaces. By this oxidation process a chemical reaction occurs which reduces the objectionable odor contained in the gases from the recovery furnace stacks.

Research and experimentation on this process was initiated by Prentice Bloedel and James Petrie of MacMillan & Bloedel, Ltd. and carried on cooperatively by the B. C. Research Council under Dr. H. R. Wright.

New AP&C Office

Alaska Pine & Cellulose Ltd., Vancouver, B.C., has opened an office at 161 East 42nd Street, New York City, to provide closer contact with buyers in the eastern U.S.

New Paper Product

Crown Zellerbach has contracted with a Swedish firm, Akerlund & Rausing, to manufacture in the United States an economical pyramid-shaped paper carton used primarily for liquid products. CZ is tailoring paper for the new package at its Western-Waxide plant in North Portland, Ore.

It is said to reduce packaging costs of a single serving up to 50%. Dairies, juice plants and petroleum refiners should be largest users here, says G. J. Ticoulat, vice president, sales, Crown Z.

The paper is a bleached kraft, coated with wax on the outside and polyethylene on the inside. The carton forming and filling are done simultaneously in one machine from a single roll of paper.

Paper unwinds from its reel, comes down into the machine as a vertical tube, heat-sealed by a pinch at the base, filled with liquid, then sealed by another pinch —at right angles to the first—below the level of the liquid. This last pinch heat-seals the polyethylene lining and secures the contents. Cutters divide the chain of Tetra Paks into individual units. These drop automatically and are packed into hexagonal receptacles, square boxes, or handle bags for smaller sizes.

Sterilization is assured since the paper is coated with polyethylene at a high temperature.

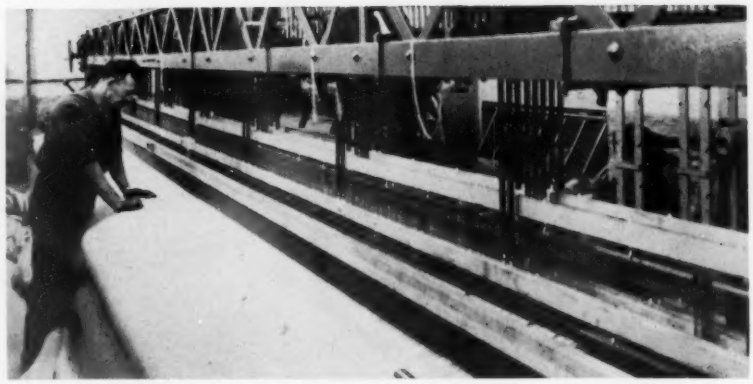
"I feel strongly about this subject of communications as a function of management, because in the growing complexity and size of today's industry, we must have management people who can communicate. Communication is the way management gets its job done. Good managers are good communicators; poor managers are usually the opposite."—**R. H. R. YOUNG,** executive vice president, Crown Zellerbach Canada.

"We are on the threshold of an era of progress which will transcend any other we have yet experienced."—**THOMAS B. McCABE,** president, Scott Paper Co.

"The question of financing (newsprint) expansion will be a problem of serious concern. Capital investment required clearly cannot be provided out of earnings. Most of it must be borrowed on a mortgage basis, and the main sources are insurance companies. There is a very real danger that those who manage such funds will be unfavorable to investment in newsprint mills on the ground that newsprint doesn't enjoy market and price conditions freely responsive to demand and supply compared with other commodities."—**P. M. FOX,** president, St. Lawrence Corp.

"We try to do everything to help teachers in our mill towns do a good job. Each year, new teachers are guests at a banquet given in their honor by our resident managers. They are taken on a mill tour. Instructors are invited to bring classes on plant tours. Our engineers and chemists speak to student groups, give advice on career opportunities."—**R. T. KIMBERLIN,** vice pres. for corporate development, Crown Zellerbach Corp.

"Financial authorities of the free world are again concerning themselves with the dangers of inflation. The problem of preventing the cost of production from rising unduly will present an urgent challenge to industrial management. There seems to be no reason to doubt that the business climate of the coming year will be favorable."—**D. W. AMBRIDGE,** president of Abitibi Power & Paper Co.



NOW MAKES FELTS UP TO 300 INCHES WIDE . . . This new $70,000 Crompton & Knowles 600-in. loom is part of modernization going on at Appleton Woolen Mills.

Modernization Increases Appleton Woolen Mills Output

Appleton Woolen Mills, Appleton, Wis., has completed four important steps in its continuing modernization program to produce more and larger felts for the paper industry.

A new $70,000 Crompton & Knowles 600-in. loom opens the way to increased production of felts up to 300 in. in width.

A new Bramwell picker-feeder provides more accurate and uniform blend of wool and synthetic fibers.

A 10-ft. stainless steel washer accommodates felts of increased size and weight and augments fulling output and permits more chemical felt treatment.

A 300-in. David Gessner napper and 320-in. Beloit dryer are new. The dryer handles giant-sized felts and the 60-in. diameter roller speeds drying time.

BOLTON AWARD WINNERS on theme of "Here's What I Want from My Work" were announced during Superintendents' convention by HAIGH M. REINIGER (right), Vice President, John W. Bolton & Sons, Inc., as Superintendents' President HOWARD STREET attentively listens.

Wins Bolton Award

A woman is top winner in the Bolton Award Contest for the first time. Mrs. Esther Davis, personnel department assistant, Finch, Pruyn & Co., Inc., Glens Falls, N.Y., won the 1956 contest top prize of $1,000, according to Haigh M. Reiniger, sales vice president, John W. Bolton & Sons, Inc. Subject of the essay contest was "Here's What I Want from My Work." Other prize winners: Gerard Chapman, technical director, Columbia Box Board Mills, Inc., North Hoosick, N. Y.; William A. Hosmer, chemist, Hurlburt Paper Co., South Lee, Mass.; C. F. Kingston, paper supt., Hammermill Paper Co., Erie, Pa.; Arthur S. Root, Jr., chemical Engineer, Champion Paper and Fibre Co., Hamilton, O.; J. H. Ainsworth, industrial engineer, Thilmany Pulp & Paper Co., Kaukauna, Wis.; Max Brower, asst. maintenance supt., Crown-Zellerbach, Camas, Wash.; Ralph C. Pratt, public relations mgr., Charmin Paper Mills, Green Bay, Wis.; Thomas F. McDonnell, safety assistant, Tileston & Hollingsworth Co., Hyde Park, Mass., and Dr. Wilfred Gallay, director of research, E. B. Eddy Co., Hull, Que.

Hubinger Co. Celebrates 75 Years in Business

After three-quarters of a century of operation, the Hubinger Co., long an important corn starch products supplier to the paper industry, is this year celebrating its Diamond Jubilee.

Oldest corn refining company in the country, 75 years in business, Hubinger has made major contributions to many industries, not least being the paper industry.

Hubinger Co. was founded in 1881 by J. C. Hubinger, who developed a home - workshop - produced laundry starch into a door-to-door best-seller.

In 1903 the Hubinger Brothers moved to Keokuk, Ia., where they commenced major commercial milling operations in the heart of the corn belt's endless supply of raw material. Through disasters of explosions and fires, the operation survived and the company expanded from a family partnership to a publicly-owned corporation of more than 900 stock owners.

to meet your requirements

To design and produce the felts *you* need which will deliver the results *you* want . . . that's the aim of the Appleton Woolen Mills.

Talk over your problems of felt application and performance with the Appleton man who calls on you. His aim is to be helpful.

He offers you the services of our creative research facilities . . . our many years of design experience . . . our modern, precision felt-making equipment . . . the devoted skills of our craftsmen. As an ever-increasing number of mills are learning, you get *more* than felts from Appleton.

TEACHER-STUDENT—*When Technical Director Lee Barlament talks felt design and manufacturing with son Bob, he calls on 32 years of experience with Appleton Woolen Mills. Young men like Bob—an engineer in our manufacturing department—are fortunate to have practical veterans to teach them the fine art of felt making.*

Appleton felts

1881 75 years 1956

APPLETON WOOLEN MILLS

a working partner with the paper industry

APPLETON, WISCONSIN

Chemicals Column

Pulp and paper—3rd biggest consumer of chemicals

"It is a cellulose clothesline on which many chemicals are hung"

CHEMICAL SPECIALTIES . . . A new booklet by Nopco is available describing chemical specialties for the pulp and paper industry. Products covered include Nopco's line of solid, paste and liquid defoamers, wax and rosin-wax sizes, coating additives, pitch dispersing agents, felt washing detergents, anti-blocking agents, special surface treatments, wetting and rewetting agents, paper softeners, wax emulsifiers, resin emulsions, and plasticizers. For a free copy write Dept. PB, Nopco Chemical Co., Harrison, N. J.

KRAFT BLEACHING PROCESS OFFERED . . . For processes involving chlorine dioxide, hydrogen peroxide or sodium peroxide, a favorable new license agreement is offered by Hooker Electrochemical Co., Niagara Falls, N. Y. Procedures are covered by U. S. patent No. 2,494,542 and Canadian No. 448,883, issued to Ferri Cascianai and Gordon K. Storin, now assigned to Hooker Co. Original assignee was Niagara Alkali Co., recently merged into Hooker. The process is "especially adapted to obtain improved color or brightness of more lasting permanence without deleteriously affecting strength of cellulosic material." Hooker offers licensing on a single nominal royalty payment of $1,000, primarily for good-will.

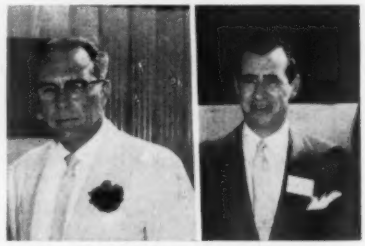
CHLORINE-CAUSTIC SODA . . . Two new illustrated wall charts presenting up-to-date instructions for safe handling of chlorine and caustic soda have been prepared by Olin Mathieson Chemical Corp. The charts are in large type on weatherproof, plastic-impregnated paper, suitable for hanging in outdoor or indoor areas where chlorine or caustic are unloaded or used.

The chlorine chart describes proper procedures for unloading tank cars and ton containers, what to do in case of a leak, and first aid measures to be followed in the event of exposure to chlorine.

The caustic soda chart presents the steps for unloading tank cars of 50% and 73% caustic and a list of safety "Do's and Don't's" in handling.

Write for charts to Industrial Chemicals Div., Olin Mathieson Chemical Corp., Baltimore 3, Md.

ATTEND DEDICATION OF LOCKPORT'S NEW MISSISSIPPI PLANT. Among those who attended the dedication ceremonies at Lockport Felt Company's new $1 million Starkville, Miss., plant were representatives of several of the South's top paper companies. Inspecting a new Tenax felt "right off the line" are (l to r) GEORGE W. HARDAKER, recently appointed Southern Division Sales Manager; ALBERT G. ROZYSKIE, Mill Manager at International's Camden, Ark., mill; NORMAN W. BOWNE, of St. Regis at Pensacola; E. PAUL EASTON, Lockport's regional sales representative, and RICHARD S. BUCKLEY, Director of Sales and Technical Service.



THE ENTIRE TOWN CLOSED DOWN for the dedication which included an address by ROBERT B. WHITE (left), Production Mgr. of Sonoco Products Co., shown with RAYMOND J. LEE (right), Pres. of Lockoptr Felt.

Not Enough Ph.D.'s Coming Up in Canada

Inadequate supply of properly trained men for technical positions in industry was the theme covered by Dr. L. R. Thiesmeyer, president of the Pulp and Paper Research Institute of Canada, in addressing the Summer meeting of the Technical Section CPPA at Murray Bay, Que.

"The products and processes of tomorrow will startle even the most jaded, provided we can get enough trained men in our laboratories and plants," declared Dr. Thiesmeyer.

"The scientific wonder boys," he continued, "will need competent machinists, technicians, accountants, doctors and lawyers to keep pace with the developments the scientist and engineer will produce."

"The pulp and paper industry," predicted Dr. Thiesmeyer, "will need about 60 ph.d's in the next five years in Canada—more than will be trained in this country in the pertinent fields."

The subject of noise abatement in machine rooms was dealt with by representatives of Spruce Falls Power & Paper Co., Powell River Co., Anglo-Canadian Pulp & Paper Mills, St. Anne Paper Co., Canadian International Paper Co., Dominion Engineering Co. and Beloit Iron Works.

Taper flow headboxes and the use of centrifugal cleaners and selectifiers in operation of newsprint machines were discussed by John Mardon, R. C. Cook and Dr. W. D. Baines; W. M. Graham, The E. B. Eddy Co., and J. A. McLean, Great Northern Paper Co.

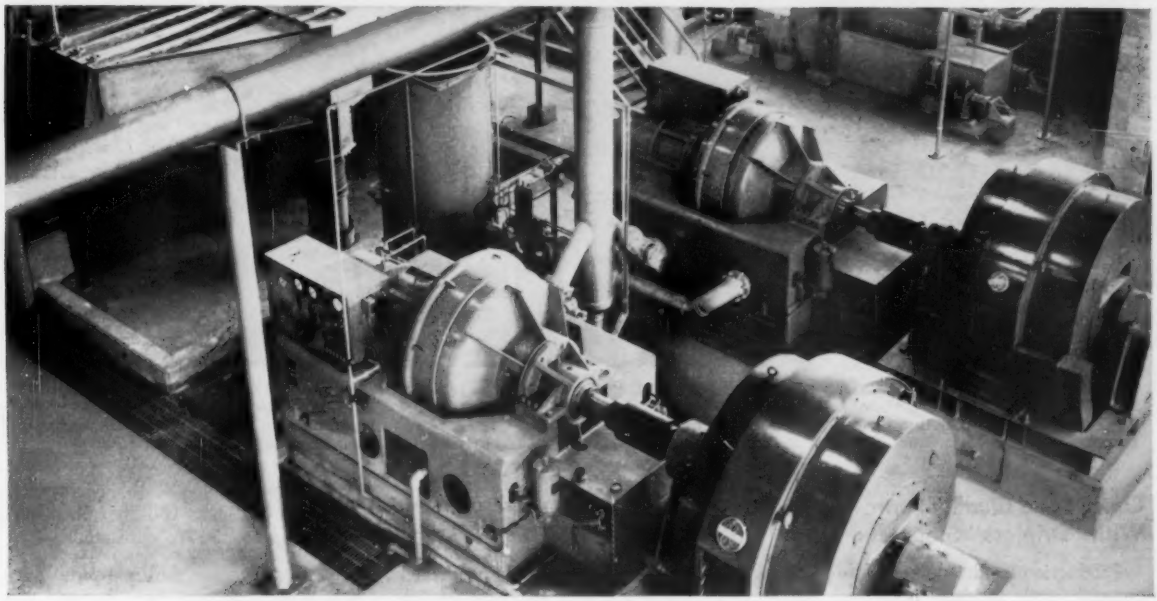
Named Executive Director

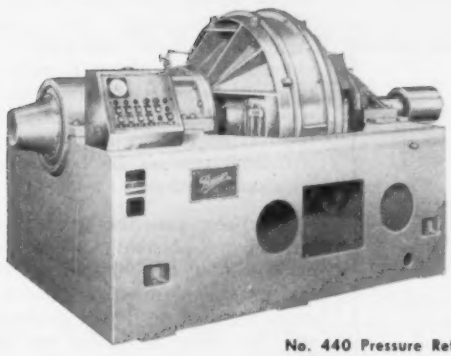
REED O. HUNT, Vice President for Operations since 1954, has been elected a Director and Member of Executive Committee of Crown Zellerbach Corp. He replaces the late Thomas McLaren on the 19-man board.

Mr. Hunt first joined Crown Zellerbach in 1927 as a storeroom clerk at the Port Angeles, Wash., newsprint mill. He later became assistant Office Mgr. there and at CZ mills at Camas, Wash. and West Linn, Ore. In 1943 he moved to San Francisco headquarters as Assistant to the Vice Pres.-Mfg. Mr. Hunt helped plan and guide its $200 million expansion since 1946. He became Vice Pres.-Mfg. in 1952.

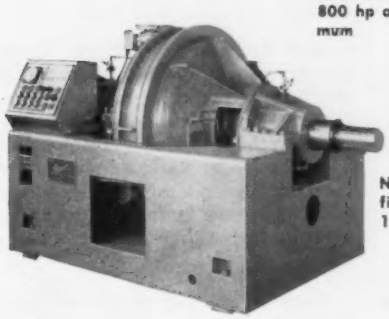
Low Horsepower Operation

... that's a big feature of the Bauer Pressure Refiner





No. 440 Pressure Refiner—800 hp and 300 T/D Maximum



No. 442 Pressure Refiner—300 hp and 100 T/D Maximum

Bauer Pressure Refiners have all the virtues of jordans with all advantages of disc mills ... and more!

- Horsepower savings.
- Higher tear and higher freeness developed.
- Simplicity of operation.
- Adapted to automatic operation by adding sensing and transmitting instruments.
- Ease of maintenance.

Many Bauer Pressure Refiners are being used on liner board, bag paper, corrugating medium, cotton linters, fine papers, tissue, newsprint, and other semi-chem and kraft installations.

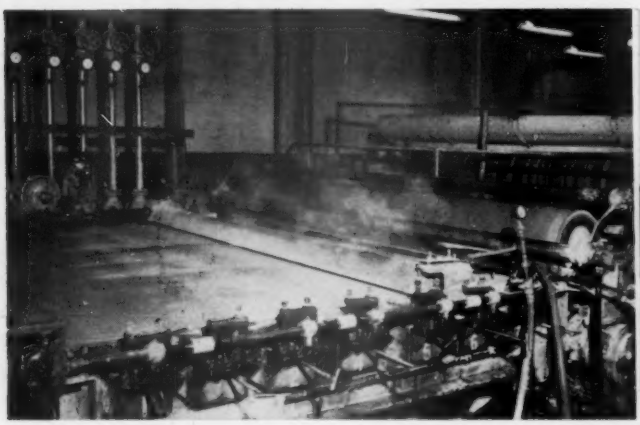
Just ask us to prove any of these statements. We'll be glad to do so. Write, wire, or call FAirfax 3-5501.

The Bauer Bros. Co.

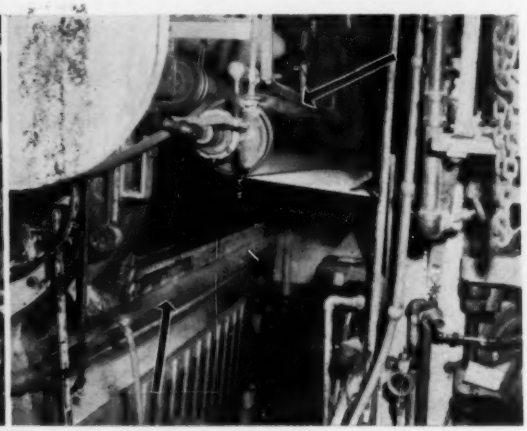
DISC REFINER HEADQUARTERS

1706 Sheridan Avenue
Springfield, Ohio

How To Do It



STEAM APPLIED AT WET END. Steam applied to web from Dupasquier dripless shower box, above fifth suction box, facilitated upping 9-pt. corrugating production from 340 to 380 fpm on Publishers' No. 1 machine.



IT ALSO HELPS AT DRY END. For better finish Publishers' uses two Dupasquier dripless steam shower pipes (see arrows) in conjunction with last dryer and spring roll immediately ahead of calender stack at right.

Output and Quality Improve With "Dripless" Steam

Production efficiencies were increased and finishes improved on No. 1 machine at Publishers' Paper Co., Oregon City, Ore., by simple applications of dripless steam. The machine, a 136-in. Beloit Fourdrinier unit, makes papers ranging from 32-lb. newsprint to 85-lb. corrugating medium to 90 to 100-lb. sulfite bundle wrap to 175-lb. core stock.

A Dupasquier multiple-pipe dripless steam shower box, located just above the wire immediately over the fifth of seven suction boxes, applies steam to the web, according to Machine Supt. J. P. Foley, regardless of type and weight paper produced. The steaming heats the web and facilitates removal of additional water at the remaining two suction boxes and at both suction presses.

Mr. Foley says the steam shower box makes it possible to speed up the machine (340 to 380 fpm on 9 pt., for example), reduces amount of steam required per ton of production, and the sheet is harder and dries easier.

One Dupasquier dripless steam shower pipe is regularly used at the machine's dry end, occasionally two. One pipe continuously applies live steam to the spring roll, just ahead of a 7-nip calender stack, to moisten the sheet for higher finish. The second is used below the spring roll to apply moisture to last dryer roll for specific papers.

These pipes are similar to ordinary steam shower pipes except they are so designed and built that condensate does not escape and drip from them.

"When we put a Dupasquier steam shower box on No. 2 machine we gained 50-fpm speed in the production of toweling," says Mr. Foley.

Greater Production of Higher Quality Pulp

- *in Less Time*
- *at Lower Cost*

This is the end result of the various processes and equipment which we have installed in pulp mills throughout North America. Send us details of your requirements.

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Associated with
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multi-plant production

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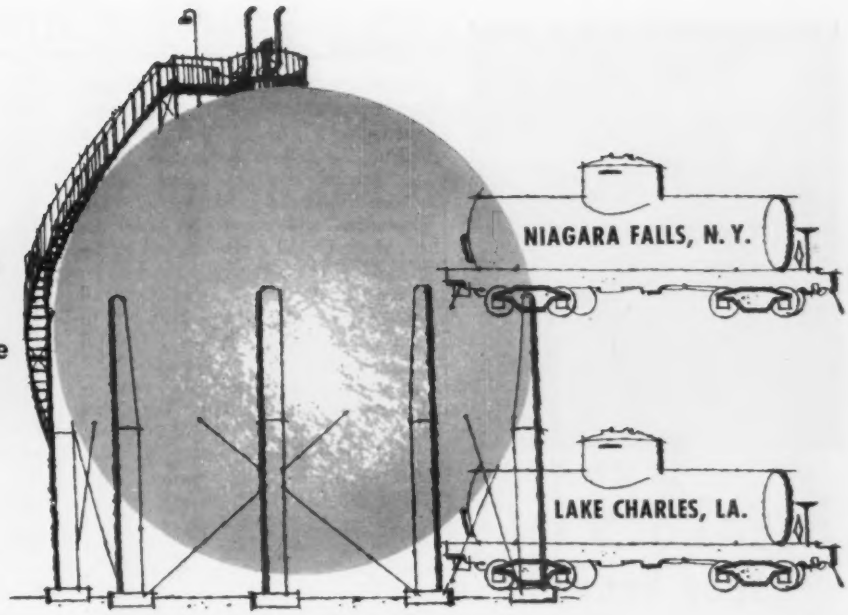
traditional quality



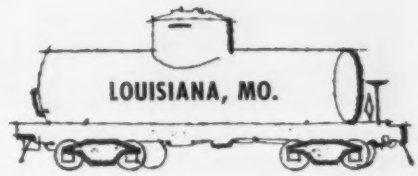
BUY AMMONIA to better advantage from MATHIESON

Require dependable deliveries of ammonia . . . coordinated with your production schedule? It will pay you to order from Mathieson. Here's why:

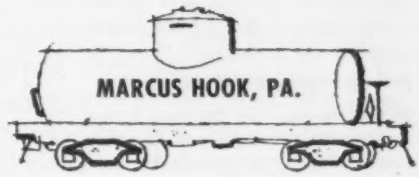
Five shipping points assure maximum protection against supply interruptions.

Expert technical service . . . particularly in the pulp and paper and metals processing fields . . . is always available.

Balanced output to industry and agriculture eliminates seasonal shortages.



Talk over your ammonia requirements with an Olin Mathieson representative soon. Let him show you why more people buy more chemicals to better advantage from Olin Mathieson . . . America's prime producer of basic industrial chemicals.



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INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

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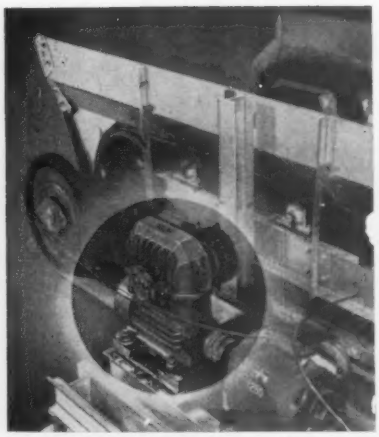
INORGANIC CHEMICALS: Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Potash • Caustic Soda • Chlorine • Hydrazine and Derivatives Hypochlorite Products • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sulphate of Alumina • Sulphur (Processed) • Sulphuric Acid
ORGANIC CHEMICALS: Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Glycol Ether Solvents • Ethylene Dichloride • Dichloroethylether Formaldehyde • Methanol • Sodium Methylate • Hexamine • Ethylene Diamine • Polyamines • Ethanolamines • Trichlorophenol • Trichlorobenzene



190 ft., 60 in. belt-type log sorting conveyor

RADICON Speed Reducer

Keeps Logs From Sleeping in Paper Mill Wood Room

A modern paper mill depends on the log conveyor to feed the entire mill operation – continuously! The all-important speed reducer must be rugged, reliable and efficient.

That's why fan-cooled Radicons, like the model 10 RHU (ratio 60:1) in the above mill installation, are being specified. Using a 15 hp motor at 1,800 rpm, the Radicon output shaft delivers a powerful 29 rpm – at 80% efficiency.

Check the installation. It is a good example of the Radicon extra roller bearing amply accommodating a small diameter (10 in. P. D.) chain sprocket... greatly reducing the cost of chain drive.

The 10 RHU Radicon sells for $595.00 – immediate delivery. Packaged drives supplied by authorized David Brown factory branches and distributors:

Portland, Oregon: Zidell Machinery & Supply Co.
San Francisco-Oakland: George M. Philpott Co., Inc.
Seattle, Washington: Cascade Machinery Co.

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Gear Products for: paper and pulp mills, chemical plants, mines, food processors . . . conveyors, hoists, agitators, screens, deckers, filters, canning machines, and other industrial equipment

DB(G)-2

EQUIPMENT AND SUPPLY NEWS

DESCRIBES BROWN STOCK WASHING . . . Dorr-Oliver Inc. announces availability of a new, 12-page, two color bulletin, the "Oliver Brownstock Washing System," describing distinguishing features, operation, components, sizes, adaptations and advantages. Also included are typical flowsheets and photographs.

Designed for efficiency and over-all operational economy, the Oliver Brownstock Washing System is adaptable to all woodpulp washing operations. The basic equipment unit contained in this countercurrent filtration system is the Oliver pulp type filter, either vacuum or valveless, equipped with Nycoe nozzles for smooth, economical application of wash. Component equipment includes a blow tank with agitator, feed box, knotter, intermediate repulper and shredder and foam tower and breaker. Write Dorr-Oliver, Barry Place, Stamford, Conn.

FACTS ABOUT SERIES 31 JORDAN . . . Emerson Mfg. Co., Lawrence, Mass., division of John W. Bolton & Sons, Inc., has issued technical bulletin No. 315-556 covering extensive design improvements, and all other data on its Series 31 Emerson Jordan. Available to all mills on request, this Series 31 Emerson technical bulletin treats, graphically and in descriptive form, all engineering features of this refining unit. A chart shows relative stock capacities, speed and power ranges. All important construction features are identified and fully illustrated. Details of Bolton Wedgeless Plug Fillings and Bolton Hydro Truss Shell Fillings are also contained in the bulletin.

WHERE WOUND ROTOR MOTORS SERVE BEST . . . Allis-Chalmers wound rotor motors are designed for use wherever high starting torque with low starting current is needed, power supply is limited, intermediate speeds are required, smooth acceleration is desired, or where high inertia loads must be accelerated.

They are available in open-type models, both drip and splash-proof designs; in totally-enclosed, fan-cooled and totally-enclosed, non-ventilated machines, NEMA 505 frame and smaller, and in totally-enclosed, fan-cooled design with tube-type, air-to-air heat exchangers in frames larger than NEMA 505. Copies of bulletin on wound rotor motors, No. 51B8195A, are available on request from Allis-Chalmers Mfg. Co., 995 S. 70th St., Milwaukee, Wis.

NEW ENGINE POWER IN TD6 AND TD9 . . . Information on new International TD-6, TD-9, TD-14, and TD-18 diesel crawler tractors is contained in 8-page, two-color mailing folders now available from Consumer Relations Dept., International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill. The TD-6

NEW CRAWLER-LOADER. First picture of new International Model 12 crawler frontend loader shown taking bite with its 1¾ yd. bucket. For information write International Harvester Co., 180 N. Michigan, Chicago.

features new engine power, stepped up 23% to 41.5 hp; a new hinge-type seat, permitting easy lubrication of steering clutch assemblies; improved visibility for the operator; a cerametallic clutch; pressurized cooling system; and improved, trouble-free lubrication system. Ask for booklet CR-491-F. New engine power is also a feature of the TD-9, increased 32% to 54.5 hp.

CUSTOM FABRICATING DATA– *Request New Brochure P-56*

This information on plant facilities and services will be of value to purchasing, procurement and engineering personnel when planning the custom fabrication of...

PROCESS TANKS
for the
Pulp & Paper Industry
on the West Coast

Send blueprints for quotation on your next job

PS F SINCE 1900 PUGET SOUND FABRICATORS, INC.
3670 EA. MARGINAL WAY—SEATTLE 4, WASH.

Craftsmen in steel plate and alloys up to 1"

INFO ON CRAWLERS, WHEEL TRACTORS . . . A free 8-page, 2-color folder now available describes the uses to which International crawlers and wheel tractors, International Drott loaders, and diesel and carbureted power units are being put in logging operations from Bangor to Biloxi. Ask for booklet CR-473-F, Consumer Relations Dept., International Harvester Co.

NEW MALFUNCTION DETECTOR . . . The Beta Corp. has a new oil-tight and dust-tight malfunction detector which anticipates trouble and shuts down rotating equipment before costly damage occurs. Applications include ventilating fans, blowers, air compressors, MG sets and other rotating equipment. Further info is yours from Beta at Forest Ave. at Ridge Rd., Richmond 26, Va. Don't forget to mention PULP & PAPER.

NEW TOP EXECUTIVES . . . National Aluminate Corp. has a new president, J. A. Holmes, who succeeds H. A. Kern, a founder, who continues as chairman. Mr. Holmes, Nalco's first chief chemist, has been with the company since its beginning. Frank H. Thorne, retiring senior vice president, keeps his post as vice chairman and Vice President H. R. Powers takes over as manager of the industrial division.

ADHESIVES PLANT FOR SOUTH . . . Stein, Hall & Co., Inc., is constructing a new $250,000 plant, office building and lab at Charlotte, N. C., Lawrence Gussman, president, advises PULP & PAPER. The new facilities will replace S-H's present Charlotte operation and are designed to meet growing demand for its textile and adhesive products in the South.

PIPING TO COMBAT CORROSION . . . Babcock & Wilcox has come up with something of interest to engineers and others associated with design or maintenance of processing equipment and piping. Its bulletin TB-410 put out by the Tubular Products Div. deals with use of seamless and welded stainless steel pipe and stainless steel welding fittings where corrosion and/or elevated

Overlooking the Fenway

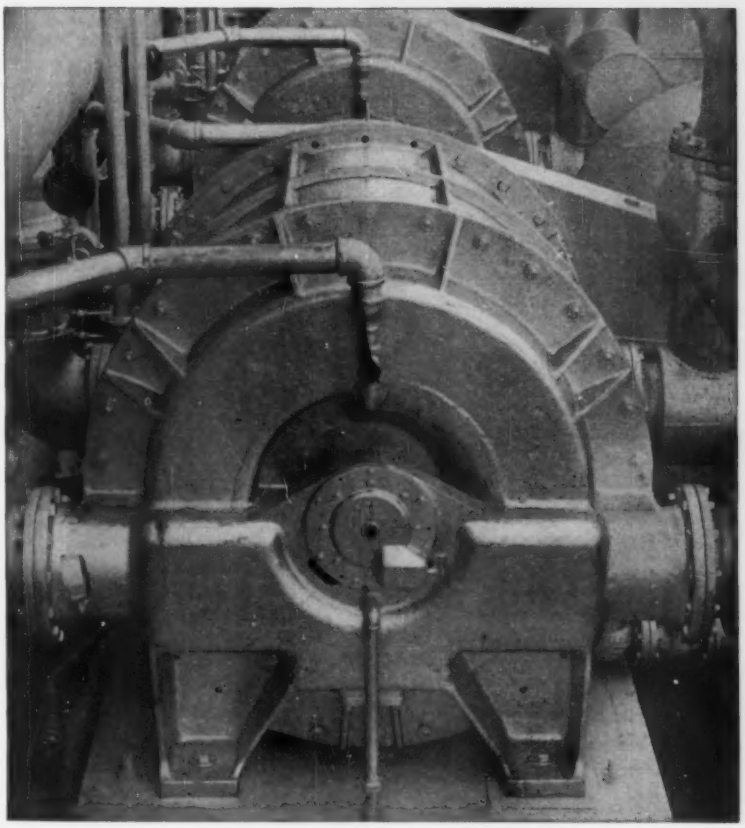
Boston, *Mass.*

Attractive, comfortable, homelike rooms, suites and kitchenettes—near Kenmore Square and Boston University. Modern, fireproof building. *from* $6 double

FAMILY PLAN
Special rates for permanent guests.

Hotel
CANTERBURY
14 Charlesgate West, Boston, Mass.

High machine speeds? High temperature headbox stock? You need NASH Vacuum Pumps!



Air from the suction rolls on paper machines carries with it substantial quantities of moisture. This considerably reduces the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump, because of the unique principle of operation, the bulk of this vapor is effectively condensed inside the pump. The total capacity of a Nash is therefore increased.

When you specify a Nash Pump it can be closely sized to the job. It is not necessary to select an over-sized unit, because the rated capacity of the Nash may be relied upon.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

441 WILSON ROAD, SO. NORWALK, CONN.

COOPER ALLOY

CORPORATION

BRIEFS

• Edited by GEORGE BLACK

CORED SIGMA BLADE

1500 lb. stainless steel sigma blade not only has to be corrosion resistant and dimensionally accurate, but a 1½" cored hole, centrally located with respect to the various cross sections is required throughout its length.

The full story is told in Cooper Alloy AKH #4

KEL-F LINERS FOR VANTON PUMPS

The addition of Kel-F to the long list of rubbers and plastics now available for liners makes the Vanton pump suitable for handling such media as fuming nitric and other strong oxidizing acids, mineral acids, alkalies, aliphatic solvents and hydraulic fluids.

Details on request.

STAINLESS STEEL RETARDERS

Cooper Alloy stainless steel retarders in the Cyclotherm Generator help to produce additional heat transfer with maintenance-free reliability. Known as Cyclotherm Cyclonic Combustion the new principle delivers a guaranteed 80% heat transfer in two passes and drops maintenance costs as much as 50%.

COOPER ALLOY

CORPORATION • HILLSIDE, N. J.

temperatures are determining factors. Also, Technical Data Card 163A has condensed technical data on Croloy steel pipe and tubing for high-temperature service. Write to B&W at Beaver Falls, Pa. for your copies.

EXPANSION IN CELITE . . . Johns-Manville Celite Division announces that William J. Bucklee, general sales manager and Carlton J. O'Neil, merchandise manager, have been promoted to vice presidents of Johns-Manville Products Corp. This is in line with J-M's Celite Div. expansion program to increase service to customers.

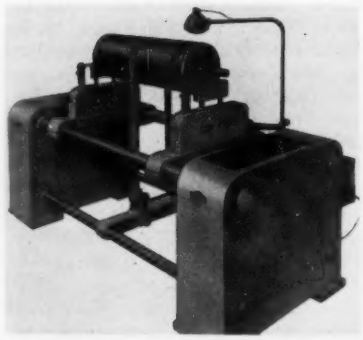
RUBBER PRODUCTS FOR NEW ENGLAND . . . U. S. Rubber Co. is building a modern branch office and warehouse on Route 128 in the Dedham-Westwood industrial area near Boston to improve service to expanding New England. Sales from this branch, which will replace outgrown facilities in downtown Boston, are expected to be 15% to 20% higher in 1956 than 1955, says Chester J. Noonam, vice president. U. S. Rubber expects its sales to pass the $1 billion dollar mark in 1956 for the first time—a gain of 8% to 10% over 1955. U. S. Rubber will also spend some $36 million in new plants and equipment this year.

McCULLOCH MOTORS CORP. has a new brush cutter for clearing brush, heavy undergrowth and overhanging branches. The tool has a 6-ft. reach and a 10-in. circular saw blade and can be operated easily by one man. With accessories, it can be converted into a chain saw or all-purpose drill.

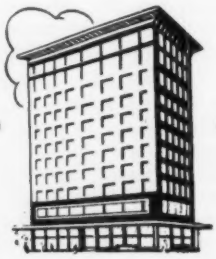
OHIO KNIFE CO., Cincinnati, manufactures replaceable hardened wear plates for chipper discs now in wide use in chipping operations in paper and pulp mills. These hardened plates have been found to have tremendous advantages over plates made of ordinary untreated material. For complete information write the company, Dept. F-50, Cincinnati 23, O.

NEW RECORDER FOR MACHINE SPEEDS . . . General Electric Co. announces that variations in roll speeds for paper mills can now be recorded and indicated precisely with a differential voltage recorder. One recorder has a scale and chart for direct reading of fpm draw —the other measures and indicates ratio between roll speeds.

REPRESENTS MASON-NEILAN IN SOUTH . . . Cameron & Barkley Co., Charleston, S. C., has been elected to membership in American Machine Tool Distributors Assn., advises Rufus C. Barkley, president. C&B has also just become a distributor for the full line of Mason-Neilan pressure reducing and regulating valves.



NEW BALANCING MACHINE OFFERS FINE SENSITIVITY . . . To provide a sensitive balancing machine in medium price range to handle applications such as armatures, rotors, and mill rolls from 5 to 10,000 lbs., Raydyne Corp. announces a new model Series 500 Dynamic Balancing Machine. Incorporating such Raydyne features as a true seismic free-in-space unbalance indicator attached to work-supporting mountings on chrome balls and raceways which provide over four inches of free amplitude travel, Series 500 has fool-proof reliability. A wide range variable speed power drive enables operator to correct large amounts of unbalance at low, safe speeds. To keep balancing time to an absolute minimum, universal V-type bearings are used to eliminate costly making and fitting of half bearings. It takes diameters to 48 in.; lengths to 35 ft. Write: Raydyne Corp., 920 West Laurel St., Springfield, Ill.



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Beautiful rooms and suites . . . smartly fashioned for modern living and old fashioned comfort. Refreshingly cooled with refrigerated air. Attractive service . . . friendly spirit . . . an experience in gracious living.

HOME OF THE FAMOUS COCK 'N' BULL GRILL

HOUSTON

GENERAL ELECTRIC CO. has a new slidefilm instruction course to aid training of industrial personnel in selection and application of modern electric and electronic control equipment. It consists of eight 35-mm color slidefilms and recordings and also includes an instructors manual. Available on a single loan or sale basis. GE also offers Bulletin GED-3039 on system engineered equipment for industrial plants.

MINERALS & CHEMICALS CORP. of America has issued a brochure about the company, including a "mine-to-finished-product" story as well as applications for M&C materials. Your free copy is waiting at Menlo Park, N.J. M&C also has a new technical bulletin on use and advantages of Edgar Aluminum Silicate Pigments (ASPs). Ask for Bulletin 302.

SOLVAY PROCESS DIV. of Allied Chemical & Dye Corp. offers a new booklet on properties, uses and handling of hydrogen peroxide. Text, with tables and diagrams, covers some chemical reactions of hydrogen peroxide and suggests applications which include use as a bleaching agent in textile and paper industries, etc.

JOHNS-MANVILLE's industrial insulation division has named Thorpe Insulation Co. as its insulation contract unit in the Gulf Coast area. W. R. DOWNS is president and general manager of Thorpe. C. B. HANN, regional mgr. and R. A. STAPLETON, area sales mgr., both of J-M's Houston office will back up with engineering and sales assistance.

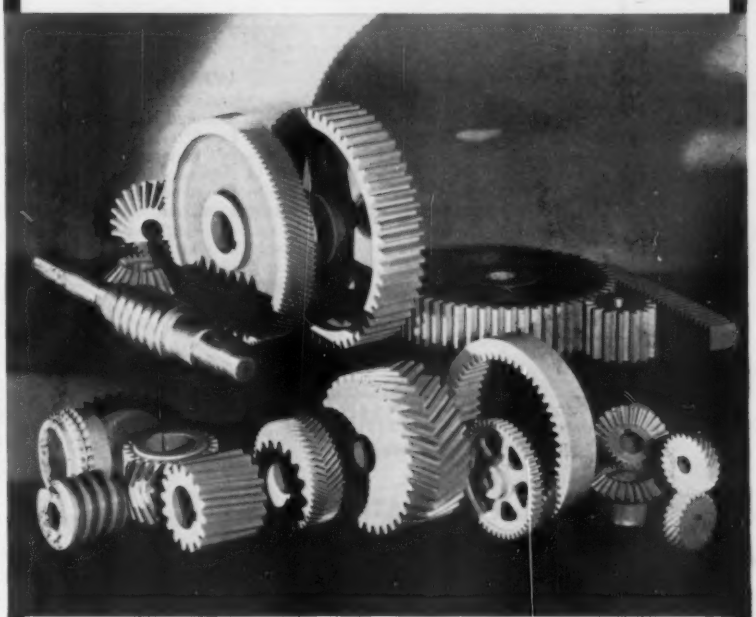
WICA CHEMICALS, INC. of Charlotte, N.C. has added Wica Softener Apt to its line of synthetic organic chemicals. It is a 50% active amphoteric compound recommended for use in resin baths and for chlorine bleaching and fibers difficult to soften.

INGERSOLL-RAND describes its new re-designed line of DMV-DHV single stage centrifugal pumps in Form 7248-A. Designed for general hydraulic services, these pumps feature double mechanical shaft seals.

One of these **9**

H&S Gears

is sure to answer your power transmission needs!



Spur • Racks • Bevel • Mitre • Internal • Worm • Helical • Spiral • Herringbone

Regardless of type, every H & S Gear is of the rugged, "husky" type. Heavy rims are well reinforced. Hubs are heavy in section, eliminating the need for key patches. All sharp corners are broken and generous fillets are provided.

H & S Gears are available of Steel, Hardened Steel, Alloys, Cast Iron, Bronze, Rawhide, Fibroil, or Bakelite.

Exacting care is exercised in every manufacturing step of H & S Gears. This insures *quietness of operation, uniform velocity ratio,* and *freedom from vibration.*

Whether you need a gear that weighs one ounce or 10 tons, why not put our years of gear engineering experience to work for you. Just send us the specifications or call. There's no obligation.

THE HORSBURGH & SCOTT CO.
GEARS AND SPEED REDUCERS
5112 Hamilton Avenue
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Send note on Company Letterhead for complete H & S Catalog

PAPER MEN

$5,000 to $100,000

PRODUCTION—SALES—MANAGEMENT

We have immediate openings for qualified men in all phases of the paper industry. If you have experience; are looking for bigger responsibilities or a general management assignment, we can assist you. No retainer or placement fee to be paid unless you accept employment through us. For confidential service call, wire or write.

FRED J. STEFFENS

Personnel Consultant to the Paper Industry

CADILLAC EMPLOYMENT AGENCY, INC.

220 South State, Chicago 4, Illinois

Phone: WAbash 2-4800

SALES REPRESENTATIVES WANTED

A paperboard manufacturer has openings for two sales representatives in Southern and Southeastern areas. Please reply to Box 275, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

CONFIDENTIAL EMPLOYMENT SERVICE

We will welcome an opportunity to be of service if you are available for a position in paper or pulp manufacturing or paper converting. SEND US YOUR RESUME. Many attractive positions at excellent salaries are open for top-notch men. No fee to be paid unless you accept employment through us. Negotiations are confidential.

Charles P. Raymond Service, Inc.

Phone: LIberty 2-6547

294 Washington St. Boston 8, Mass.

WANTED

Immediate opportunities in Northwest for capable and qualified Journeyman Electrician and Pipefitter, preferably with pulp and paper experience. Age 30 to 50. Must be dependable and temperate with desire for steady employment in new modern mill now in operation. Wages and working conditions excellent. Reply in your own handwriting, attaching photograph and giving complete personal data and detailed work experience to Box 276, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

PULP MILL SUPERINTENDENT

Wanted for 800 ton Kraft Pulp Mill in paperboard plant. Must be competent and experienced. Salary open. This position is with a large company and is a real opportunity for a capable person. Write to Box 274, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

DRAPER BROTHERS CO., manufacturers of the Draper Felt, announces appointment of WILLIAM L. WENDELL as field service engineer on felt problems in connection with felt sales. A graduate engineer, he has been with Fraser Paper Co., Ltd., Madawaska, Me., since 1948; for the past three years as plant engineer. He will operate from the Draper Felt Office and Factory at Canton, Mass.

PULP BLEACHING COMPANY

625 Alaska St., Seattle 4, Wash.

EQUIPMENT FOR

CELLULOSE PURIFICATION AND RELATED PROCESSES

MERRICK FEEDOWEIGHT

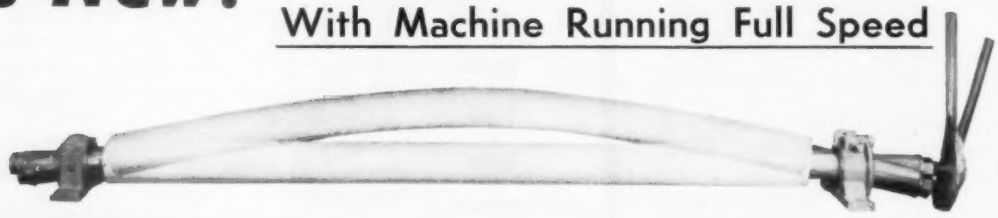
for Accurately Feeding Salt Cake and Lime, by Weight

Write for Bulletin 551

MERRICK SCALE MFG. CO. 185 Summer St. Passaic, N. J.

Irving R. Gard & Company, Lowman Building, Seattle 4, U. S. A.

It's New! Vari-Bow Expander can be Adjusted With Machine Running Full Speed



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This new Mount Hope Free-Wheeling Expander is the latest development in its field. Not only does it prevent wrinkles and creases in paper and felts, up to 210" wide; in addition the bow can be varied for maximum effectiveness *with the machine running at full speed*. No time out, no slowdowns for adjustments.

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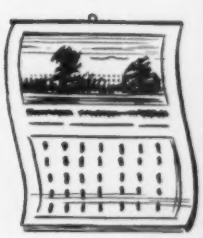

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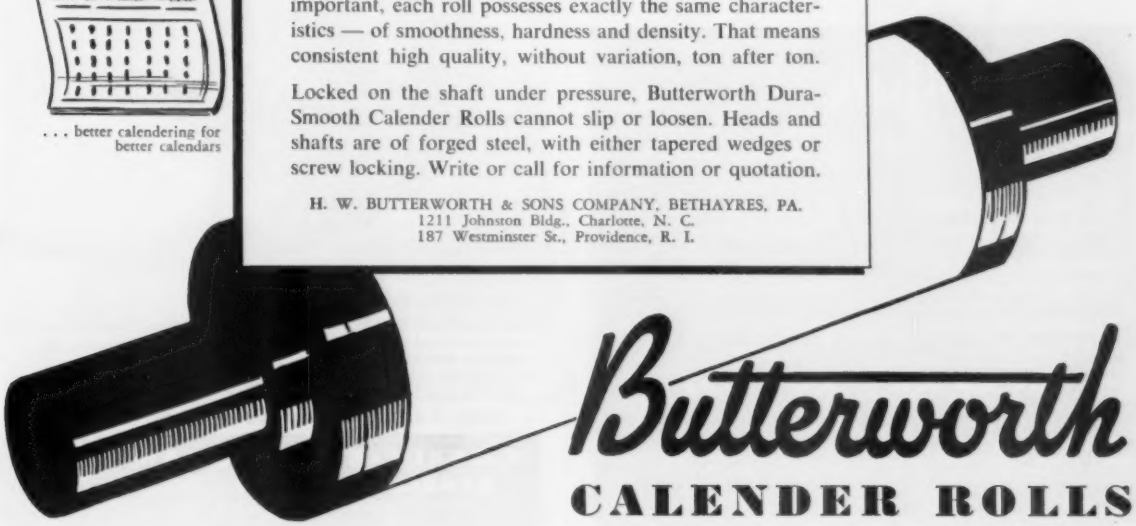

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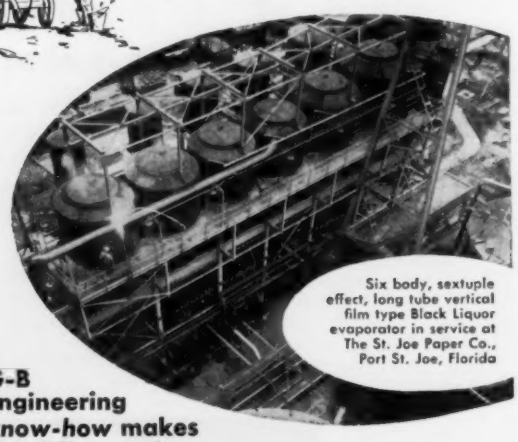

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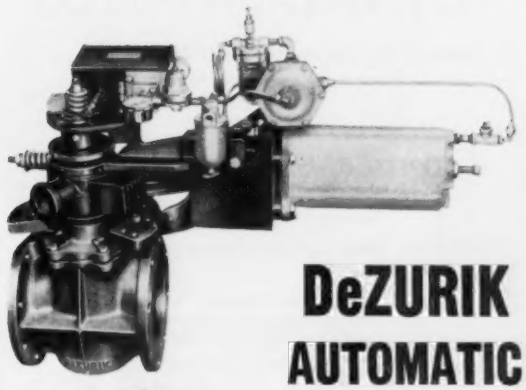

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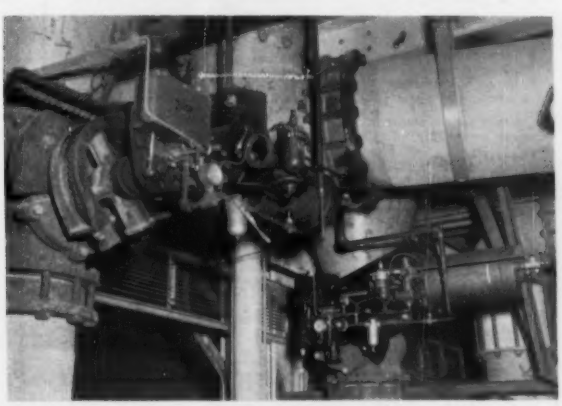

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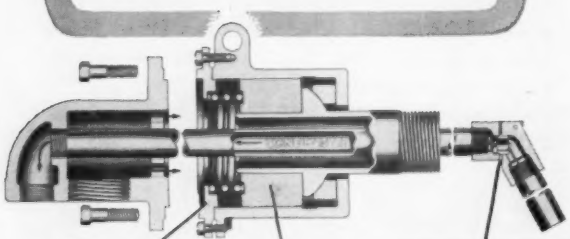

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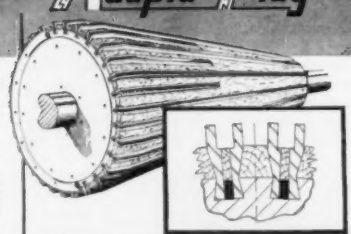

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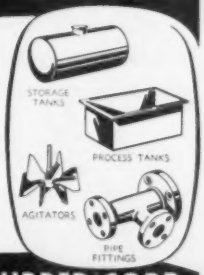

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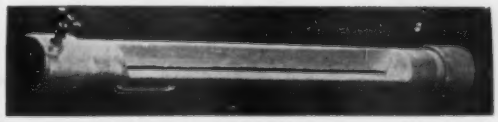

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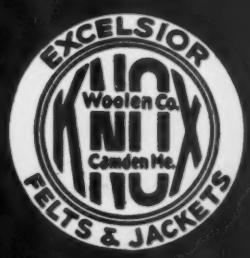

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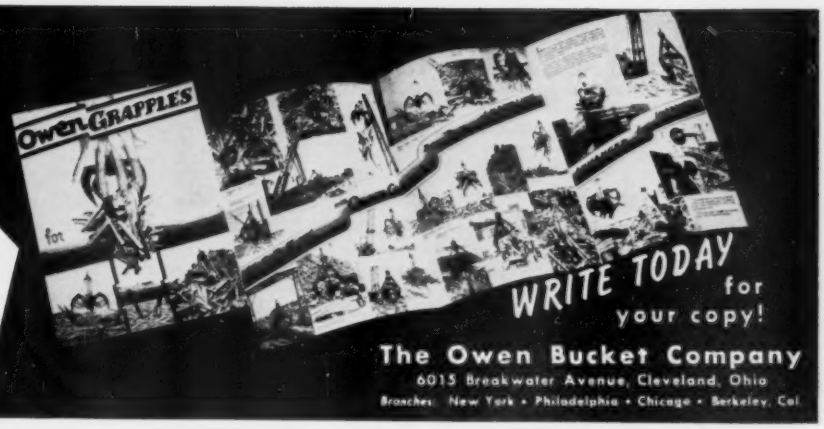

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The LAST WORD — PULP & PAPER EDITORS' PAGE

Sage Comment by R. H. Robertson, Sr.

One of the most quotable speeches to come to PULP & PAPER's attention in a long time was delivered recently to the annual Forest Products Research Society in Asheville, N.C., by Champion Paper & Fibre's judicious president and chairman, Reuben H. Robertson, Jr.

Sometimes witty, sometimes serious, Mr. Robertson's speech was loaded with worthy comment.

On the wisdom of sometimes being a follower rather than being first: "We need look no farther than the father of our country. He was first in war, first in peace, first in the hearts of his countrymen—but he married a widow."

On the methods of progress: "Lincoln Steffens said, 'The world is full of things to do over and do right.' Past experience should be a guide, never a hitching post."

On the slow development of forest research: "In 1906, little was said about research in forestry—probably for the same reason given by the farmer who turned down a book on how to improve his farm because he already knew more than he could use. We have witnessed the steady growth in the philosophy of forest thrift since then. Today we 'mine' fewer forest lands and 'farm' more of them."

On the "indispensable man": "Fine characteristics are not always easy to find in one individual . . . often we must acquire the various required skills through a number of men rather than a single person."

On mixing vision with practicality: "Let your dreams roam the skies—but engineer them back to earth."

On "unhurried research": "It is generally understood that studies in forest genetics require not months, not years, but decades—they must extend beyond the life span of the individual. I heard of one research scientist who devoted years to obtain the answer to a question and when he finally got the answer he found, to his distress, that he had forgot the question."

On changing times and techniques: "Good ideas are sometimes born 30 years too soon. When old fields of study become fruitful again because of some new technique, we may get some comfort from the words of the poet Emerson. He said, 'In the work of every genius we recognize our own rejected thoughts coming back to us with a certain alienated majesty.' "

What "Link-Belt News" Says About Us

Many reasons have been given for the success of America's free enterprise system. There are truly many reasons. One of the most important is the constant infusion of the "circulating know-how" which our system receives from our business publications.

By the uniform excellence of their performance, these vital and widely circulated publications, with the readership of approximately 30 million, have raised themselves and their influence to the point where they have become an indispensable arm of business and industry.

It is safe to say that everyone engaged in any responsible post, and everyone who strives to achieve responsibility, regards his particular business publications as *must* reading. No one who wants to keep abreast of his own field of interest can afford *not* to take the time to read them. Our constantly changing and growing economy moves so rapidly we *must* read our business publications if we hope to keep our own knowledge in step with current developments.

From the appearance of the first business paper near the end of the 18th Century, the development of the "know-how" magazines has followed steadily the economic development of the nation itself. The publications not only mirrored our total development, but their circulation of our American savvy pushed us all along.

Today more than 2,000 business publications with some 10,000 editorial workers are keeping American savvy flowing into the veins of our economic life. If we take the time to read the publications that deal with our specific fields, we will have the advantage of a never-ceasing postgraduate course in our own particular specialty.

More power to these voices of industry.

—*Link Belt News.*

Biggest and Busiest Machine on Earth

Our productive system is the biggest machine on earth. At one end, it takes in the services of employes, capital, raw materials and other necessities of production. At the other, it turns out food, clothing, housing and all the other things we want, including a multitude of paper and pulp products. When we succeed in improving the efficiency of this machine, we have increased our "productivity."

Productivity is measured as output per man-hour. Yet man-hours are just one factor in productivity. We measure our car engine's efficiency in miles per gallon, but it takes many parts, in addition to gasoline, to make a car run efficiently.

Millions of things affect the rate of productivity—even the weather. Some of these are plain enough to see. Better tools and equipment, and the savings to finance them, are essential. So are the skill and cooperation of employes, and such factors as the willingness to take risks and adopt new methods.

Our economic machine has many millions of parts. When it runs with increasing efficiency, no single element can claim all or most of the credit. It takes hundreds of smoothly working parts to keep a car on the road. And that goes a million-fold for our American economic machine.

new data proves: UREA is excellent for

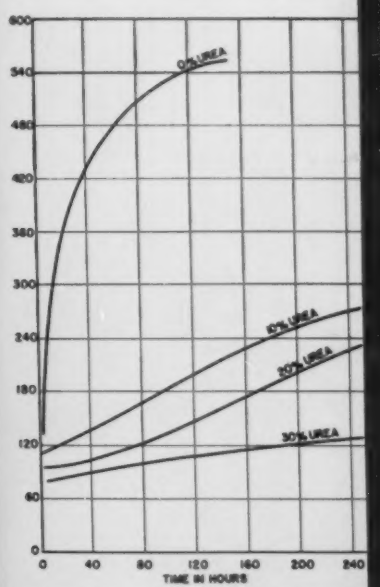
Viscosity Control

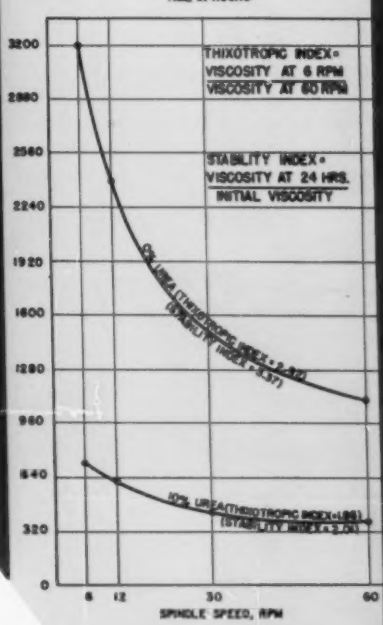
in paper coating

We can show you just how effective UREA is in controlling viscosity of modified starch, casein and Alpha Protein adhesive dispersions—and in reducing thixotropic index too.

The means: actual experimental data in the form of 15 graphs prepared by our research group, and based on field trials. Two graphs are presented on the right.

This data indicates that small amounts of UREA— • give large viscosity reductions, and drastically lower the rate of viscosity increase on standing • lower thixotropic index • permit use of adhesive dispersions with higher solids content.





Because UREA is readily available, and effective, paper coaters interested in improving operations and lowering costs will want to examine this data in detail. Send for the paper "Viscosity Control of Paper Coating Adhesives with UREA" by Belche and Ellis for the complete story.

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